

UI Carver College of Medicine
University of Iowa Hospitals and Class
January 2007

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II. EXECUTIVE SUMMARY

Concerns regarding the supply of physicians led University of Iowa Health Care leaders to establish, in the summer of 2006, a Task Force to explore issues related to the Iowa Physician Workforce. Task Force participants included medical leaders, hospital executives and medical education leaders. The Task Force was asked to measure physician supply and demand, analyze key workforce trends, and make recommendations.

The Task Force met four times and conducted business electronically between meetings and after the final meeting in December 2006. The Task Force agreed on a set of factual considerations and understandings that provided context for data presentations and deliberations. The source of supply, demand and trends data was the Iowa Physician Information System, an existing, one-of-a-kind statewide database that has tracked Iowa's physician population prospectively for more than 30 years. The robust nature of this database makes it particularly useful in conducting trend analyses and supply projections.

From 1980 through 2005, Iowa's overall supply of physicians increased 54%; by contrast its general population increased by just 2% during the same period. With the exception of the surgical specialties, which have been level, the supply trend for all other categories of physicians — primary care, non-primary care, medical and pediatric subspecialties — has been steadily increasing for the past 10 years.

In comparison to the nation's physician population, Iowa physicians are young. Women make up an increasing proportion of the state's medical workforce. Iowa's physician workforce is anticipated to continue to grow, but at a slower rate than was experienced in the 1990s.

Relocation to other states is significant and is the principal reason for attrition from the supply of Iowa physicians, accounting for more than 60% of the annual loss. Retirements now account for only about a quarter of the annual attrition in Iowa's physician population.

International medical graduates (IMGs) constitute a stable 15% of the Iowa physician supply. On the other hand, IMGs represent a disproportionate share (~25%) of the physicians entering and leaving Iowa practices annually.

Task Force members identified and ranked the specialties which were perceived to be in greatest need or demand in their respective geographic regions. Their top five specialties in order of priority were: psychiatry, neurosurgery, general internal medicine, orthopedic surgery and cardiology. An Iowa supply analysis was performed for each of the five specialties. A corresponding demand analysis was also performed and discussed. Subsequently, the Task Force directed that additional specialties undergo a similar analysis. Using the results, the Task Force developed a Critical Demand Index for measuring the intensity of demand across specialties, and estimating the amount of time (on average) it takes to fill a position.

The Task Force reviewed Iowa's current capacity to train physicians in residencies and subspecialty fellowships. Programs were inventoried by specialty, location, sponsorship and enrollment. Constraints on starting new programs, expanding current programs, and extending rotations to remote sites were identified and discussed. Those constraints include cost, accreditation requirements, and the effects on resident recruitment.

The Task Force drew 14 conclusions and made 17 recommendations for consideration by stakeholder organizations and policymakers. The recommendations are aimed at: (1) increasing the supply of physicians, (2) improving the geographic distribution of medical services, and (3) retaining physicians for training, entry into practice, and continued practice. The Task Force selected its 10 highest priorities for Iowa's "action agenda."

The Report of the Task Force on the Iowa Physician Workforce has been sent to the major organizations in Iowa's health care community. A mechanism for continuing the dialogue on physician workforce trends, ideas, and concerns will be initiated in the months ahead.



III. BACKGROUND

Task Force Formation

Concerns regarding the adequacy of the nation's future physician workforce, particularly with respect to the future supply of physicians, have become a recurring theme from both national and state perspectives. National conferences, research papers and workforce reports have attracted a good deal of attention to this subject making it, once again, a health policy issue. Opinions about this subject vary: some experts forecast a nationwide physician shortage of specialists by 2015; others believe the overall supply will be adequate to meet demand; and still others hold that there will be a shortage, but specify a need for primary care physicians, not subspecialists.

University of Iowa Health Care leaders recognize that physician supply initiatives take many years to have a measurable effect due to the long course of physician education and training before entrance into practice. That reality, coupled with the state's aging population and the increase in chronic disease in the elderly, led to the formation of a University of Iowa task force in June 2006. The Task Force was formed by Jean E. Robillard, M.D., Dean of the UI Carver College of Medicine, and Donna Katen-Bahensky, Director and CEO of University of Iowa Hospitals and Clinics.

Membership and Charge

Members of the Task Force on the Iowa Physician Workforce are listed below:

Kent Bottles, M.D., Chief Medical Officer Iowa Health System-Des Moines	Russell Knight, President/CEO Mercy Medical Center-Dubuque
Tim Charles, President/CEO Mercy Medical Center-Cedar Rapids	William Langley, M.D. Medical/Executive Director Genesis Health Group-Davenport
Frank Claudy, M.D., VP for Medical Affairs Genesis Medical Center-Davenport	Ted Townsend , President/CEO St. Luke's Hospital-Cedar Rapids
Peter Densen, M.D., Chairman Executive Associate Dean UI Carver College of Medicine	Roger Tracy, Assistant Dean UI Carver College of Medicine
Douglas Dorner, M.D., Senior VP of Medical Education & Research Central Iowa Health System-Des Moines	David Vellinga, President/CEO Mercy Medical Center-Des Moines
Scott Henderson, M.D., Program Director Mercy FM Residency-Mason City	Mark Wilson, M.D., Director UI Graduate Medical Education-UIHC

Peter Densen, M.D., Executive Associate Dean of the UI Carver College of Medicine, served as chairman of the Task Force. The charge given to the Task Force was:

- Ascertain the current supply of non-primary care physicians in Iowa, with particular emphasis on medical sub-specialists and surgical specialists;
- Analyze workforce trend data for those select specialties, focusing on supply, geographic distribution, age, gender, and other pertinent data;
- Advise Iowa stakeholders of key interventions that might lead to an increased supply, a more favorable geographic distribution, and better retention of medical and surgical specialists in Iowa.

Proceedings

The Task Force met four times in 2006 for half-day sessions: July 18, August 29, October 13 and November 17. Additional business was conducted electronically and by telephone. The meeting format generally included data presentations, discussion, exchange of viewpoints, and identification of items for the next meeting's agenda, including points for further clarification. The many topics presented and discussed included:

- Characteristics and trends in the general supply of Iowa physicians.
- Changes in supply within specialty categories
- Patterns of attrition in the Iowa physician workforce and their influence on physician supply
- The influence of international medical graduates in the Iowa physician workforce
- Iowa marketplace demand (i.e., job opportunities) in selected medical specialties



- Iowa's graduate medical education (GME) training capacity
- Factors limiting GME expansion
- Recommendations for increasing the supply of physicians and improving the geographic distribution of the physician workforce.

In addition to meetings, Task Force members had two "homework" assignments during the fivemonth period. First, members met with opinion leaders in their respective health care systems to ascertain the medical specialties of greatest need or demand as perceived by their organizations. The specialty lists were submitted to the chairman and then merged into a group list. Later in the process, members were asked to select the top 10 priorities out of the longer list made by the Task Force as a whole. The 10 most preferred specialties were then submitted in rank order 1 through 10.

IV. CONTEXT

The Task Force agreed on a set of factual considerations and understandings that provide context for their proceedings and this report. Those points of agreement were:

- The quality of health care in Iowa is very good relative to other states. According to studies on quality of care provided to Iowa Medicare beneficiaries, Iowa ranks sixth among states in quality, despite being in the bottom 10 in Medicare spending per beneficiary. (Stephen F. Jencks, M.D., Ph.D., et al, "Change in the Quality of Care Delivered to Medicare Beneficiaries, 1998-1999 to 2000-2001", JAMA, January 15, 2003.)
- The vitality of the economy affects the demand and use of physician services. Multiple studies by health economists have shown that the growth of the health sector, including physician services, is directly tied to overall economic growth. Health spending in general and spending on physician services in particular are closely related to the growth of the economy. (Richard A. Cooper, M.D., Director of the Health Policy Institute of the Medical College of Wisconsin, presentations to members of the American Association of Medical Colleges, 2005-2006.)
- Iowa's aging population will alter the demand and utilization of physician services. It is generally understood that the elderly need and consume more medical services than younger adults and adolescents. Given Iowa's aging population, it is reasonable to expect its physician supply requirement to increase as the population ages.

- The Iowa physician workforce is faced with unfavorable conditions due to the generally low level of reimbursement for their services. This is particularly true in the case of public payers. While unfavorable payment schedules are not limited to Iowa, it is noteworthy, as previously cited, that our state ranks 80th among the 89 Medicare payment localities. (*Only nine other states* have less favorable payment schedules.)
- *Iowa is a rural state*. In Iowa, only one city, Des Moines, has a population approaching 200,000. Cedar Rapids is the only other city with more than 120,000 residents. Instead of large urban populations, Iowa has nine or 10 smaller regional centers across the state. While these smaller populations limit the number of physicians who can be supported at these centers, their regional distribution makes specialized services more accessible within each subregion.
- Attracting health professionals to the rural Midwest, including much of Iowa, is a continuing challenge. This reality is likely explained, at least in part, by the two previous contextual points. Geographic location is also a very significant contributor to this challenge. Thus, when contemplating new professional recruitment and retention strategies, or when evaluating strategies currently in use, it is important to recognize that Iowa faces a greater challenge than most other states.

• Access to care has dimensions beyond merely the supply of providers, including the ability to pay through health insurance or out-of-pocket, transportation, and cultural considerations. Having an adequate supply of physicians and other providers ideally distributed across our state would not resolve all health service access issues in our current health care system. Remaining to be addressed are affordability of service,transportation issues, and cultural influences that affect access in a diverse population.



V. CAVEATS

Any discussion of physician supply and future workforce requirements would be incomplete if it failed to acknowledge several caveats. Particular considerations that were discussed at the Task Force's first meeting were:

(1) Health Care System Reform — The Task Force was given its charge within the context of the current health care delivery system. If Iowa, or the nation, were to effect health care system reform, estimates of physician supply requirements would almost certainly differ from those that many experts are projecting today.

This caveat is consistent with the January 2006 report of the American College of Physicians; recent editorials and publications by David Goodman, M.D., of Dartmouth Medical School; and the writings of Barbara Starfield, M.D., M.P.H, professor at the Johns Hopkins School of Public Health. According to these experts, a reformed health care system is likely to require more primary care physicians and fewer sub-specialists. (David C. Goodman, M.D., "Too Many Doctors in the House," *The New York Times*, July 10, 2006. Barbara Starfield, M.D., "The Primary Solution," *The Boston Review*, November-December 2005.)

(2) Generational Differences — In contrast to the population of practicing physicians, physicians emerging from training today are less inclined than their older counterparts to work long hours and long work weeks. In addition, recent graduates are more likely to want to accommodate dual careers and are increasingly likely to be women. As a result of these differences, recent graduates place greater emphasis on balancing their personal and family lives with their devotion to medical practice. As a consequence of these considerations, some caution is needed when using historical physician productivity data to project future physician supply requirements.

(3) Practice Feasibility — In rural communities, there is often an expressed desire, and sometimes an effort, to attract specialists other than the family physicians and general surgeons common to rural hospital communities. While successful specialist recruitment can be accomplished in some rural settings, typically the outcome is negative or a short-term success. The reason is related to practice feasibility and the need to achieve a certain "critical mass" in order for recruitment, and more importantly retention, to be successful.

The feasibility of a medical practice in a given specialty must take multiple considerations into account. First, the patient base must be financially sufficient to support a new practitioner at a level competitive with other opportunities. Next the practice content (i.e., types of patient problems and procedures) must be sufficiently balanced and distributed to assure the professional satisfaction of prospective specialists. Finally, there is the allimportant factor of call and coverage. If one is to be the only physician in his/her specialty in the community, how will emergencies be covered so the physician has an acceptable amount of time off? Likewise, how will the practice be covered for periods of vacation, continuing education and personal leave? Call and coverage arrangements improve slightly when there are two or more physicians in the same specialty, but that arrangement usually intensifies concerns in other areas (e.g., practice income and procedure volume), thus underlining the need for reasonable expectations with regard to recruitment prospects.

(4) Population-To-Physician (PTP) Ratios —

These widely quoted and easily calculated ratios yield gross estimates of physician need that are used to make expedient camparisons between a declared ideal ratio and an actual ratio in a defined geographic area or captive patient population. The larger the geographic area (multi-stte or national) and the more

homogeneous the population density in a given area, the more applicable the ratio. If these conditions are not fulfilled or if accurate physician or population data are lacking, such ratios are imprecise and insensitive planning tools.

PTP ratios are less useful at a state level, and at the county or community level can be quite misleading. For example, the distribution of a state's population can distort state-level applications of specialty ratios. Likewise, concentrations of specialists in areas contiguous with the county or community to which the ratios are being applied are often not fully accounted for in the calculation.

In addition, PTP ratios are sometimes used for a given specialty (e.g., general internal medicine or pediatrics) without taking into account the presence and contribution of other specialties which care for the same category of patients (e.g., family physicians).

The fact that there are a range of expert opinions as to the appropriate ratio for a given specialty suggests there is risk in depending on them as the sole or even principal tool for workforce planning or policy. On the other hand, PTP ratios have a proven record of utility in large health maintenance organizations where patients are a captive population and the employer can define the scope of practice for each specialty.

- (5) Estimated Need or Projected Demand vs. Real Marketplace Demand The common methods for modeling physician need/demand:
- Need-calculation computes the number of physicians needed to serve an estimated population or defined panel (per #4 above);
- Supply/demand simulation simulates current supply and makes future adjustments to supply and demand based on estimates;

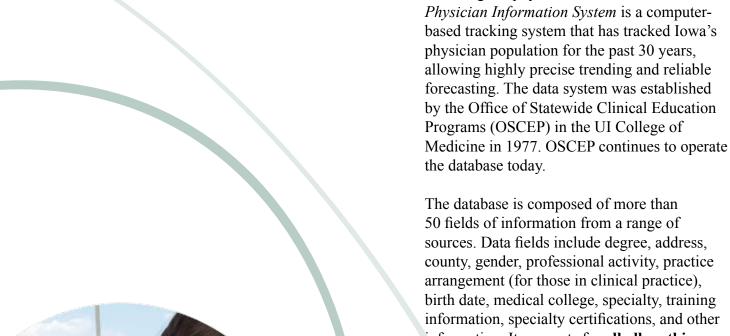
• Demand-trend extrapolation — fits historical economic and physician supply benchmarks and extrapolates to a future date, usually 10-15 years later.

Iowa is at a distinct advantage compared to other states and the nation because it does not have to simulate physician supply or extrapolate trends and benchmarks for its physician population. The Iowa Physician Information System provides actual supply figures and actual trend lines. Because the state has this tool, it can also readily identify physician worksites. Just as current supply is precisely quantifiable, so is the current number of job opportunities in a given specialty, at least for a specific point in time each year. Marketplace demand (open positions) can be quantified by performing demand studies involving contacts with every possible employer or practice entity for a given specialty. This method ensures 100% response rate and accounts for all openings at a specific point in time. The resulting measure of demand for a given specialty category (general internal medicine, family medicine, general surgery, etc.) is an exact count of opportunities open to an available physician in his/her specialty.

(6) Physician Assistants and Advanced Practice

Nurses — A comprehensive analysis of physician workforce supply and demand should thoroughly account for physician assistants and advanced practice nurses, and their respective roles in the workforce. Because these two categories of health professionals were not included in the charge to the Task Force, supply and demand assessments were not performed and the impact of such assessments on physician workforce projections were not addressed.

VI. IOWA PHYSICIAN **INFORMATION SYSTEM**



sources. Data fields include degree, address, county, gender, professional activity, practice arrangement (for those in clinical practice), birth date, medical college, specialty, training information, specialty certifications, and other information. It accounts for all allopathic and osteopathic physicians in all medical and surgical specialties. The Iowa Physician Information System serves many purposes, but foremost are its abilities to characterize the physician population, monitor trends in the workforce, and forecast changes in the supply

Iowa is the only state in the U.S. that has tools in place to continuously inventory major categories of its health professions workforce, including the physician workforce. The *Iowa*

The tracking system was the principal source of the data analyzed by the Task Force and presented in this report. The benchmark date of December 31, 2005, was the effective date of most of the data examined by the Task Force. Benchmarking occurs at the end of the calendar year, so December 2005 was the most recent complete year of tracking at that time.

of physicians.

VII. PHYSICIAN SUPPLY

Growth of Iowa's Physician Population

From 1977 to 2005, the number of practicing physicians (MD and DO) in Iowa's supply increased from 2,990 to 4,973. This represents an increase of 66% in 29 years, or an average of 2.3% per year. During the 10-year period, 1991-2001, the U.S. physician population increased by 26% while Iowa's supply increased at the slightly slower rate of 22.9% (Figure VII.1). Considering the growth of Iowa's physician population in the context of the growth of its population since 1980 is revealing. As a consequence of their different growth rates (54% vs. 2%, respectively), the number of physicians per 100,000 population increased from 111 to 167. (Figure VII.2).

The pattern of physician entry and exit in Iowa over the past 29 years is shown in Figure VII.3. During this 29-year period, an annual average of 305 new physicians entered Iowa (green line) and 234 physicians left (red line) due to relocation, retirement or other causes of attrition. The difference between these two figures (the number between the two trend lines in Figure VII.3) represents the annual net change in physician number in Iowa. For the entire 29-year period as well as the past 10 years, the *average net gain was 71 physicians per year*.

During this period there were just two instances of net physician loss. The first, in 1985, occurred during a period of recession in the state's economy and substantial emigration of Iowans to other states. (The state population decreased by 137,000 from 1980 to 1990.) The second net loss occurred in 2005 for less evident reasons. Nevertheless, it is already clear that Iowa will show a net *gain* of approximately 75 physicians for 2006 — a gain consistent with the 30-year annual average. Thus, the two occasions of net losses occurred 20 years apart and appear anomalous.

These data establish three very important points:

- The growth rate in the Iowa physician population can be expected to exceed the rate of growth of the Iowa population for the next 10 years
- The annual total movement of physicians in and out of Iowa medical practices is substantial, averaging ~540 physicians per year, or more than 10% of the base. Retention of even a fraction of those physicians exiting Iowa (234/year) represents a strategic opportunity.
- Iowa experiences an average net gain of 71 physicians per year.

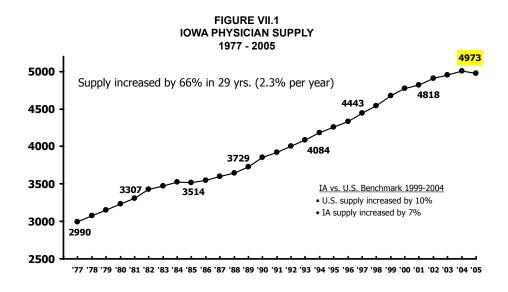
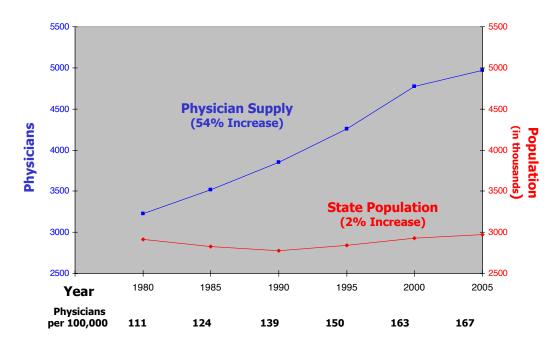
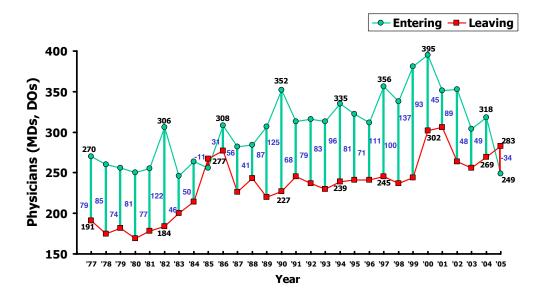


FIGURE VII.2

IOWA PHYSICIAN SUPPLY VS. POPULATION



NET GAIN/LOSS IN IOWA PHYSICIANS 1977-2005



Supply Trends by Specialty (1996-2005)

The supply pattern of Iowa's total physician population for the most recent 10-year period is shown in Figure VII.4. The table shows for each year the number of new physicians entering Iowa practices, the number of current practitioners leaving practice, and the resulting net gain (or loss). It also displays totals for the 10-year period, annual averages, and the percent change from the first year to the last. For this period, an annual average of 336 new physicians were added to the physician supply, while an average of 265 left their professional positions in Iowa. That combination resulted in an average net gain of 71 (identical to the 29-year average net gain) and 17% growth in the total supply for the 10-year period.

The Task Force also examined similar supply data for key specialty categories within the state's general population of physicians (Figure VII.5). For the purposes of this analysis, primary care was defined as family medicine, general internal medicine and general pediatrics. With one exception, all specialty categories showed increasing supply trends for the 10-year period 1996-2005. Despite an overall net gain of 10%, the surgical specialties were declared "level" for that period due to small annual net losses or no change in the latter years of this 10-year record. Thus, the increase in the growth of the total physician population is generally mirrored in the growth of most of the physician specialty categories.

FIGURE VII.4

IOWA PHYSICIAN SUPPLY ANNUAL NET GAIN/LOSS 1996-2005

All Physicians 1995		<u>Entered</u>	<u>Left</u>	Net Gain (Loss)	<u>Total</u> 4263
1996		312	241	71	
1997		356	245	111	
1998		338	237	101	
1999		381	244	137	
2000		395	302	93	
2001		351	306	45	
2002		353	264	89	
2003		304	256	48	
2004		318	269	49	
2005		<u>249</u>	<u>283</u>	<u>(34)</u>	
	Total	3357	2647	710	4973
	Annual Average	336	265	71	
	1996 - 2005 Percent Change			16.7%	
	Current Trend			Increasing	

FIGURE VII.5

SPECIALTY CATEGORY	ANNUAL AVERAGE ENTERING	ANNUAL AVERAGE LEAVING	NET GAIN	10-YEAR GAIN %	SUPPLY TREND
Primary Care	135	95	40	24%	Increasing
Non-Primary Care	201	169	32	12%	Increasing
Internal Medicine Subspecialties	36	25	10	24%	Increasing
Pediatric Subspecialties	8	5	3	31%	Increasing
Surgical Specialties	42	36	6	10%	Level

Physician Demographics

Fifty-five percent (55%) of Iowa's physicians are under age 50, and 45% are 50 or older. Thirteen percent (13%) are past age 60 and both the mean and median age is 48 (Figure VII.6).

Retirements account for 30% of the 234 physicians leaving the Iowa workforce annually. For the 5-year period ending December 31, 2005, the mean as well as the median age of physicians retiring in Iowa was 65.

The distribution of physician ages varies across specialties and varies over time within a given specialty. For example in 1977, 28% of Iowa's 1,135 family physicians were past age 60, whereas in 2005 only 9% of 1,270 family physicians were in that age bracket. The bracket shift reduced the mean and median ages of Iowa's family physicians, as a whole, by four and five years, respectively. Both are now 47, nearly identical to the corresponding numbers for Iowa's total physician population.

To the surprise of many, Iowa's physician population is younger than the nation's physician population. The American Medical Association's *Physician Masterfile* reports 36% of active U.S. physicians were 55 or older in 2005. Just 25% of Iowa's physician workforce was in that age range during the same time period. The spread is even more dramatic at age 65 and older, with the nation at 19% and Iowa 4%.

An increasingly important demographic consideration for analysis is gender. Today, the number of women entering careers in medicine is essentially the same as the number of males. Therefore, the ratio of women-to-men in the physician population is increasing annually. In 1985, 8% of Iowa's physicians were women. Since then, the percentage has nearly tripled to 22% (Figure VII.7). This increase is even more noteworthy when considered in the context of the overall increase in the number of Iowa physicians during the same period. Fully 56% (816) of the total net gain in Iowa physicians (1,459) from 1985 through 2005 were female (Figure VII.8).

AGE DISTRIBUTION OF IOWA PHYSICIANS

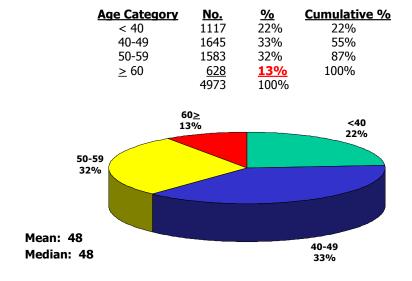
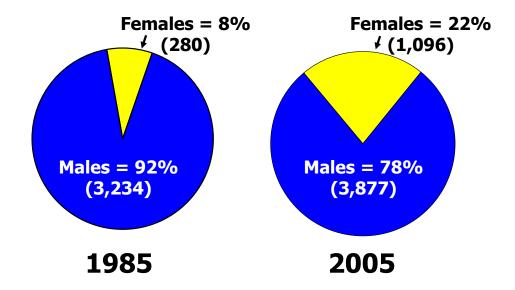
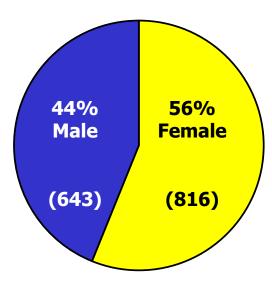


FIGURE VII.7

IOWA PHYSICIAN POPULATION
GENDER



NET GROWTH IN IOWA PHYSICIAN POPULATION
MALE VS. FEMALE
1985-2005



Net Increase = 1,459

As is commonly understood, women physicians are more likely than their male counterparts to work part-time or to leave the workforce intermittently. and on average, they leave their careers permanently at a younger age. As a consequence, these trends have implications for projections of future physician workforce requirements that are considerably more complex to assess than age. It is difficult at this stage to quantify these effects, but it is clear that projections of workforce requirements will need to accommodate the changing gender pattern in the workforce. In addition this trend, coupled with the previously noted differences between today's younger physicians and older physicians with respect to work preference and balance in lifestyle, almost certainly mean that the supply of Iowa physicians will need to be greater than would otherwise be projected without these sociological shifts.

In summary, the key observations revealed by these demographic data are:

- The average age of Iowa's overall physician population is younger than generally believed and younger than that of the nation's physician workforce.
- Women make up an increasing proportion of matriculates to medical school and the physician workforce in Iowa.
- In general, practice patterns and length of practice differ between women and men. These differences coupled with other sociological shifts present a challenge when projecting future physician need and supply.

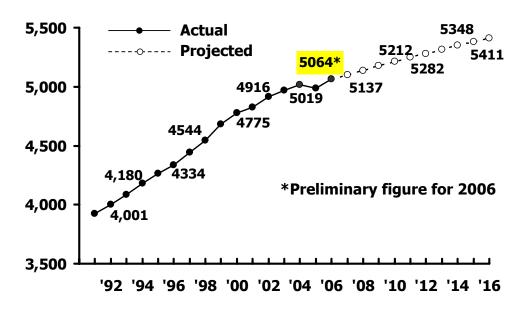
Physician Supply Projections

Because the Iowa Physician Information System has continuously tracked the supply of Iowa physicians and has recorded changes in the physician population, it can be used to forecast future supply with a high degree of reliability. Confidence in such projections stems from a track record based on more than 30 years of data and relatively little variance across the annual benchmarks.

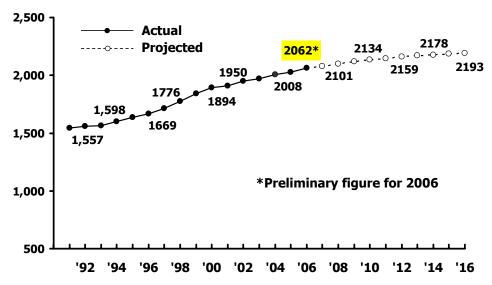
Linear regression analysis can be used to project physician supply five years or even 10 years out. This method is particularly applicable to projections of total physician supply or large aggregations within that population, for example, primary care and non-primary care physicians. Given the pattern of increasing supply during the past 29 years, it is reasonable to project that physician supply will continue to grow at a faster rate than Iowa's general population (Figures VII.9-11). However, general statements such as these do not address the supply dynamics for specific specialties, especially those that have a small base in the current physician population. While the projections for the total physician and primary care physician populations are favorable, strategies are needed to address the supply of non-primary care physicians.

Note that the supply projection for non-primary care specialties (in the aggregate) was influenced substantially by the experience in 2005 when there was a net loss of 34 within this category (Figure VII.11). The projection for this category should improve as a result of a net gain of 40 in 2006, based on preliminary figures, and the continuation of gains in 2007.

PROJECTION: IOWA PHYSICIAN SUPPLY

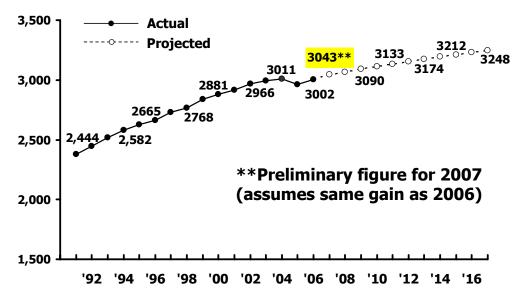


PROJECTION: IOWA PRIMARY CARE PHYSICIANS**



**Family Physicians, including residency-trained FM practicing Emergency Medicine, General Internists, & General Pediatricians

FIGURE VII.11
PROJECTION: IOWA NON-PRIMARY CARE PHYSICIANS*



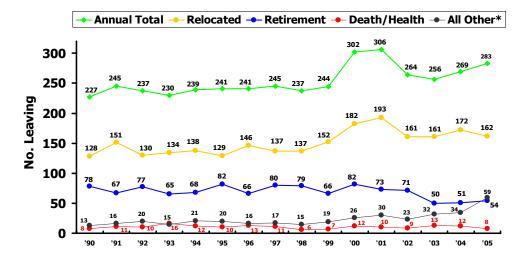
*Excluding: Family Physicians, including residency-trained FM practicing Emergency Medicine, General Internists, & General Pediatricians

Attrition

Tracking system data demonstrate that the principal causes of physician departure from Iowa's workforce are relocation and retirement. Health, further training, death, and other reasons for practice termination account for relatively small fractions of annual attrition.

Figure VII.12 displays the pattern of attrition in the Iowa physician population from 1990 through 2005. The green line represents the *total* loss of physicians annually for the 16-year period. The yellow line shows the annual number of physicians leaving Iowa practices and relocating to other states. Relocation is the principal cause of physician attrition in Iowa and it tracks parallel with the overall pattern of attrition in the workforce, as shown on the graph.

PHYSICIANS LEAVING IOWA PRACTICES ALL SPECIALTIES 1990-2005



^{*}All other categories: Locum Tenens, Inactive, Loss of License, Military, Training, and Unknown

Physician retirements (blue line) have been declining during the past five years due in part to having fewer individuals at or near the normal retirement age for Iowa physicians. These observations came as somewhat of a surprise to some members of the Task Force who were under the impression that retirement is the principal source of physician attrition and that physicians are retiring at an earlier age today than in the past. Death and disability (red line) account for the loss of 8-12 physicians per year (4-5%). Miscellaneous causes of attrition (black line) have been increasing in recent years. These reasons include leaving practice for inactive status, further training, locum tenens work, military service and disciplinary actions.

The entire 29-year history of attrition within the state's physician population is shown in Figure VII.13. This table records the frequency (and percent) associated with each cause of attrition in 10-year periods, as well as for the entire 29-year period. These data confirm that relocations are increasing, now accounting for more than 60% of the total physician departures; retirements are contributing less to attrition than in earlier periods (25% vs. 32%); and "miscellaneous" now accounts for nearly 10% of physician loss, a slightly greater share of the overall attrition compared to 10 years ago.

It is also important to note that the average annual rate of attrition as a percentage of the total pool of Iowa physicians has remained constant at approximately 6% for each of the 10-year periods. Thus, this figure is the metric against which any intervention strategies addressing retention or succession should be measured

The two factors that contribute to the net gain of physicians each year are the number of new physicians entering practice in the state and the number leaving practice for whatever reasons. In a competitive recruitment market, it is just as important to have effective retention and succession strategies as it is to have recruitment strategies, especially if the number of physicians relocating their practices to other states is high. From Iowa's perspective, this means being able to identify the precise reasons for practice relocation. Although the number of Iowa physicians relocating to practices elsewhere is known with precision, at present virtually no data exist to shed light on the reasons for relocation. At the state and local levels, such data would be invaluable for the development of strategies that focus on those factors most amenable to improve retention of physicians, especially in regard to relocation.

With respect to attrition, observations that the Task Force felt deserved emphasis included:

- Relocation of Iowa physicians to other states is substantial (162 physicians/year) and it is the principal cause of attrition (61% of the total).
- The reasons underlying Iowa physician relocation are unknown and must be determined in order to develop contravening strategies.
- Both the number and percentage of Iowa physicians retiring from practice is declining, although the average age of retirement (65 years) has not changed.

FIGURE VII.13

LOSS OF IOWA PHYSICIANS CAUSES OF ATTRITION 10 YEAR PERIODS

Cause of Attrition	<u>1977-1986</u>	Annual Average	<u>1987-1996</u>	Annual Average	1997-2005**	Annual Average	<u>Total</u>	29-Year Average
Relocation	1058 (52%)	106	1312 (56%)	131	1457 (61%)	162	3827 (56%)	132
Retirement	657 (32%)	66	730 (31%)	73	606 (25%)	67	1993 (30%)	69
Death & Disability	199 (10%)	20	121 (5%)	12	88 (4%)	9	408 (6%)	14
Miscellaneous*	124 (6%)	12	186 (8%)	19	255 (10%)	28	565 (8%)	20
•Ave. Annual Attrition		204 (6.13%)		235 (5.95%)		267 (5.58%)		235 (5.88%)
•Total 10-Yr. Attrition	2038		2349		2406		6793	
•Ave. Total Supply		3324		3961		4788		3998

^{*} Includes Locum Tenens, Loss of License, Military, Inactive, Training and Unknown ** Nine-year period, not ten

International Medical Graduates

International medical graduates (IMGs) are physicians whose medical education occurred in schools outside the U.S. and Canada. They are an important asset in Iowa's health care system contributing substantially to the physician population as well as to medical education and research. The proportion of the Iowa physician workforce that is foreign-educated has stayed remarkably constant from 1977 through 2005. In 1977, 14% of Iowa's physicians were IMGs. Twenty-nine years later the ratio has increased by only 1% (Figure VII.14). During that period, the total physician population grew by 66%, and as a consequence, the number of IMGs went up by about 350, but they stayed proportionally the same as a percent of the total supply of physicians.

What is not evident from these data is the influence international medical graduates have on the dynamics of physicians entering and leaving Iowa practices (Figure VII.15). For the 10-year period, 1996-2005, IMGs represented, on average, 24% of the physicians entering practices and 23% of those leaving practices in Iowa. Thus, although IMGs constitute 15% of all Iowa physicians, they are disproportionately represented in both the entry and exit physician populations.

The combination of physicians entering and leaving practice each year results in a net gain (or loss) for the year. IMGs accounted for 29% of Iowa's average annual net gain in physicians during the recent 10-year period. Underscoring the IMG influence in this dynamic process is the fact that IMGs accounted for the state's entire net loss of 34 physicians in 2005. That year, 53 IMGs entered Iowa practices while 88 left resulting in a net loss of 35 IMGs. The net loss for the total physician population was 34 (249-283).

The principal cause of IMG attrition is relocation. Although this is consistent with the experience in Iowa's total physician community, the percentage attributable to "relocation" among all causes of attrition in the IMG population is higher (65%) than that among the non-IMG segment (56%).

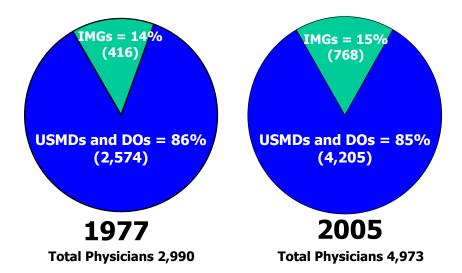
The Task Force also examined the locations at which IMG physicians practice in Iowa. Over the past 10 years, 60% of IMGs entering Iowa practices selected communities with more than 50,000 population and 70% of the net gain in IMGs occurred in Iowa cities of that same size.

Key observations regarding IMGs and the Iowa physician workforce were considered to be:

- IMGs constitute 15% of the total physician work force but account for a disproportionate percentage (~25%) of physicians both entering and leaving Iowa.
- IMGs tend to join or establish practices in towns with populations in excess of 50,000 residents.
- The high rate of IMG turnover presents both an opportunity and a challenge for recruitment and retention of this physician population.

FIGURE VII.14

IOWA PHYSICIAN POPULATION INTERNATIONAL MEDICAL GRADUATES (IMGs)



Total physicians increased 66% while IMGs increased 85%

FIGURE VII.15

INTERNATIONAL MEDICAL GRADUATES* ENTRY/EXIT INTO IOWA PRACTICES 1996-2005

	Physicians Entering		Physicians Exiting			Annual Net Gain (Loss)			
<u>Year</u>	<u>Total</u>	<u>IMGs</u>	<u>%</u>	<u>Total</u>	<u>IMGs</u>	<u>%</u>	<u>Total</u>	<u>IMGs</u>	% of Total
1996	312	51	16%	241	50	21%	71	1	1%
1997	356	83	23%	245	44	18%	111	39	35%
1998	337	70	21%	237	39	16%	100	31	31%
1999	381	80	21%	244	50	20%	137	30	22%
2000	395	94	24%	302	57	19%	93	37	40%
2001	351	96	27%	306	76	25%	45	20	44%
2002	353	101	29%	264	67	25%	89	34	38%
2003	304	83	27%	256	58	23%	48	25	52%
2004	318	94	30%	269	71	26%	49	23	47%
2005	<u>249</u>	<u>53</u>	21%	<u>283</u>	<u>88</u>	31%	<u>(34)</u>	<u>(35)</u>	103%
Total	3356	805	24%	2647	600	23%	709	205	29%
Annual Average	335.6	80.5	24%	264.7	60.0	23%	70.9	20.5	29%

^{*}IMGs comprise 15% of the Iowa physician population.

VIII. TASK FORCE SPECIALTY PRIORITIES

Members of the Task Force represent individual health care systems covering most of Iowa's geographic subregions. Each Task Force member was asked to submit a list of up to 10 medical and surgical specialties regarded as being of greatest need or in greatest demand in the member's region or system. Members were encouraged to consult colleagues in tailoring their specialty choices to their own region or health system. Further, they were asked to rank order the top five selections with one representing the greatest need/demand.

The results of this exercise are presented in Figure VIII.1. The first priority for each list submitted received a value of 5, the second a value of 4, and so forth. The last column in the table displays a specialty's mean rank plus the number of parties ranking the specialty. The top five workforce needs (or unmet demands) as perceived by Task Force members are above the red line and include psychiatry, neurosurgery, general internal medicine, orthopedic surgery and cardiology.

Task Force members were asked specifically to consider supply and demand for family physicians in their regions. The group, representing institutions that are sponsoring eight of Iowa's nine family medicine residencies, concluded that the present supply of family physicians is sufficient to meet current needs with the important caveat that efforts to meet the demand for rural family physicians need to be constant and focused.

An analysis of physician supply was conducted and discussed for each of these top five ranked specialties. The analysis considered data across four different supply perspectives: 10-year supply trend; geographic distribution by county; visiting consultant (outreach) activity; and population-to-physician ratios by county. Trend data were described as increasing, level, or declining based on rules concerning the net increase or decrease over the 10-year period reconciled with the pattern over the last two to three years.

TASK FORCE ON IOWA PHYSICIAN WORKFORCE

Ranking* of Specialty Preferences											
Specialty	Mercy MC	Mercy DSM	Genesis	Mercy CR	IHS Statewide	IHS DSM	UICCOM	Sum of Rank Values	Mean Rank	# Ranking Specialty	Total Score**
Psychiatry	5	5	3		5	4	5	27	3.86	6	9.86
Neurosurgery		3		5	4	5		17	2.43	4	6.43
Gen Internal Medicine		1	1	2	2		4	10	1.43	5	6.43
Orthopedic Surgery	3				3	1	3	10	1.43	4	5.43
Cardiology		4				2	2	8	1.14	3	4.14
Neurology	2	2					1	5	0.71	3	3.71
Ob/Gyn					1	3		4	0.57	2	2.57
Phys Med/Rehab			5					5	0.71	1	1.71
General Surgery	4							4	0.57	1	1.57
Endocrinology				4				4	0.57	1	1.57
Vascular Surgery			4					4	0.57	1	1.57
Pulm/Critical Care				3				3	0.43	1	1.43
Emergency Medicine	1		2					3	0.43	1	1.43

^{*}Ranking: Each participant ranked his top 5 specialties based on the need/demand in his respective system. The first priority received a value of 5. The second priority received a value of 4; the third priority a value of 3; fourth priority a value of 2; and the fifth priority a value of 1.

^{**}Total Score: The total score represents the specialty's mean rank plus the number of parties ranking the specialty.

Psychiatry

Figure VIII.2 shows that the 10-year supply of psychiatrists in Iowa had marginally contracted by the close of 2005. Particularly noteworthy is the recording of net losses for three of the last five years, especially in the context of a modest increase in the Iowa population during that time. Thus, by definition, the supply trend line in psychiatry is one of decline.

The geographic distribution of psychiatrists by county is displayed in Figure VIII.3. Just 32 of Iowa's 99 counties are home to at least one psychiatrist, although additional sites receive direct services from some of Iowa's psychiatrists who conduct outreach clinics as visiting consultants (Figure VIII.4).

Computations of county, state and U.S. population per psychiatrist are presented on the map in Figure VIII.5. Iowa has twice the population per psychiatrist compared to the nation (13.241 vs. 6,657). Therefore, Iowa has half the number of psychiatrists per 100,000 population (7.6) compared to the national figure (15.8). On the positive side, as noted on the map, 79% of Iowans reside within 20 miles of a psychiatrist, but given the unfavorable population to psychiatrist ratio, proximity does not equate well to access.

FIGURE VIII.2

IOWA PHYSICIAN SUPPLY ANNUAL NET GAIN (LOSS) BY SPECIALTY 1996-2005

Psychiatry/All Subspecialties	<u>Entered</u>	<u>Left</u>	Net Gain (Loss)	<u>Total</u>
1995				224
1996	15	24	(9)	
1997	19	13	6	
1998	18	12	6	
1999	14	15	(1)	
2000	20	14	6	
2001	15	10	5	
2002	15	20	(5)	
2003	19	14	5	
2004	16	20	(4)	
2005	<u>11</u>	<u>23</u>	(12)	
Total	162	165	(3)	221
Annual Average	16	17	0	
1996 - 2005 Percent Change			-1.3%	
Current Trend			Declining	

FIGURE VIII.3
DISTRIBUTION OF PSYCHIATRISTS (221)

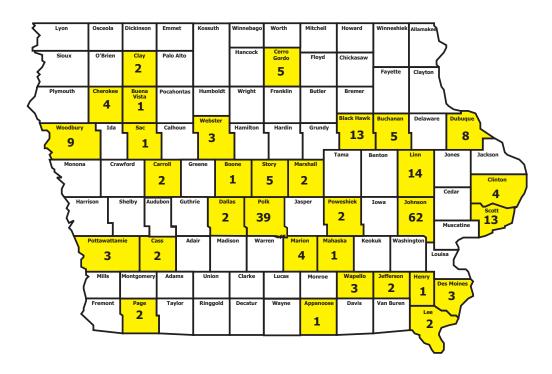


FIGURE VIII.4

VISITING CONSULTANT CLINICS PSYCHIATRY (47)

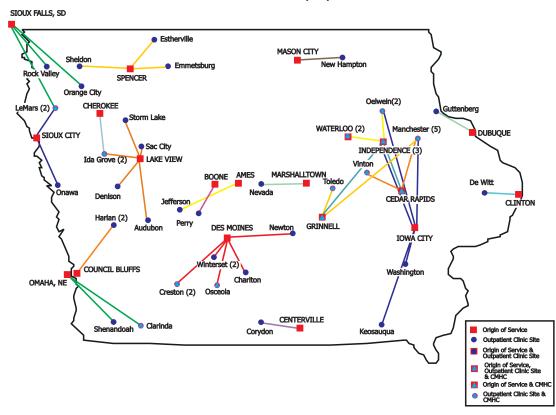
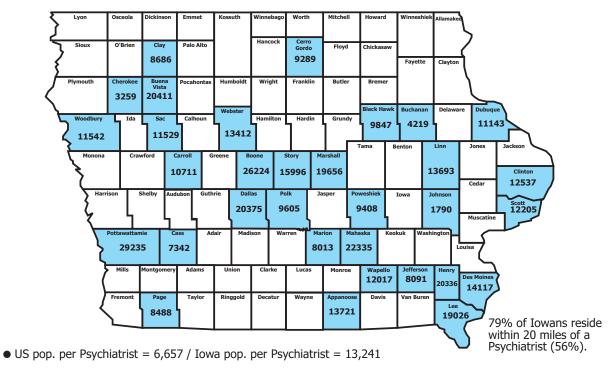


FIGURE VIII.5 COUNTY POPULATION PER PSYCHIATRIST



• Psychiatrists per 100K population: US = 15.8 Iowa = 7.6

Neurosurgery

Neurosurgery requires a much smaller base of practitioners than most specialties. As shown in Figure VIII.6, Iowa's supply of neurosurgeons has been level for the past 10 years. Of note, some of the apparent attrition between 2000 and 2002 is attributable to the decision by a group of Sioux City neurosurgeons to move their office to Dakota Dunes, South Dakota. This change in physical location was not accompanied by a loss of service to Iowans since the physicians continued their hospital practice in Sioux City. If these physicians were factored back into the supply, the pool of neurosurgeons would have experienced a net gain of four on a base of 27 neurosurgeons.

The geographic distribution of Iowa's neurosurgeons, including the four in Dakota Dunes, is displayed in Figure VIII.7. Although just eight of Iowa's 99 counties are home to one or more neurosurgeons, the economic and practice realities in neurosurgery are such that few Iowa communities have the critical mass of

resources and volume of patient problems to support a neurosurgery practice, particularly considering that few neurosurgeons will want to enter solo practice.

Given the clinical content of a neurosurgeon's practice and the relatively small number of practitioners and practice locations within Iowa, the few instances of neurosurgeons conducting visiting consultant outreach clinics in the region of their respective practices is fully understandable (Figure VIII.8).

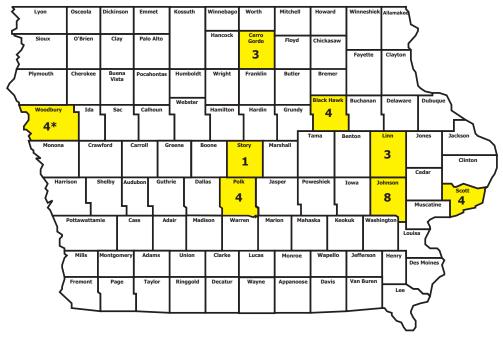
Iowa's relative lack of major population centers limits the number of actual or prospective neurosurgery sites, as well as the total number of neurosurgeons. Therefore, it is going to be a challenge to improve on the population-to-neurosurgeon ratio compared to the corresponding national figure (94,398 vs. 61,900) shown in Figure VIII.9. Even when a neurosurgery practice is feasible in a community, there still may be issues relating to a particular physician's limited scope of practice.

FIGURE VIII.6

IOWA PHYSICIAN SUPPLY ANNUAL NET GAIN (LOSS) BY SPECIALTY 1996-2005

<u>Neurosurgery</u>	Entered	Left	Net Gain (Loss)	Total
1995				27
1996	3	0	3	
1997	1	3	(2)	
1998	6	0	6	
1999	1	0	1	
2000	0	4	(4)	
2001	1	7*	(6)	
2002	2	3	(1)	
2003	3	1	2	
2004	3	2	1	
2005	1	<u>1</u>	<u>0</u>	
Total	21	21	0	27
Annual Average	2	2	0	
1996 - 2005 Percent Change			0.0%	
* 4 moved to SD Current Trend			Level	

FIGURE VIII.7
DISTRIBUTION OF NEUROSURGEONS (31)*



^{*}Includes 4 Neurosurgeons from Dakota Dunes, SD

FIGURE VIII.8 VISITING CONSULTANT CLINICS NEUROLOGICAL SURGERY (4)

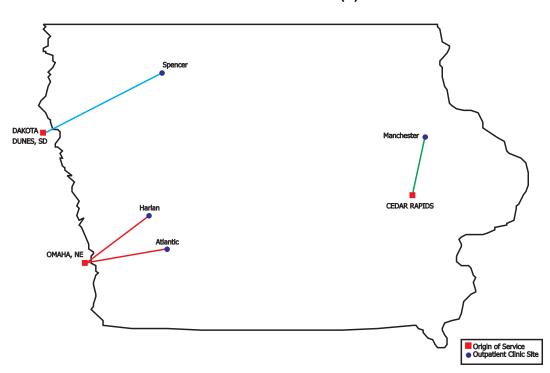
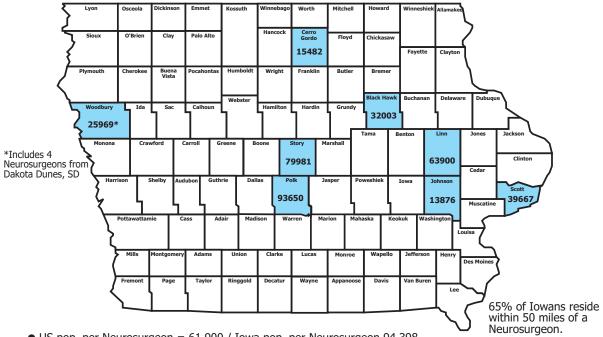


FIGURE VIII.9 **COUNTY POPULATIONS PER NEUROSURGEON**



- US pop. per Neurosurgeon = 61,900 / Iowa pop. per Neurosurgeon 94,398
- Neurosurgeons per 100K population: US = 1.6 Iowa = 1.1

General Internal Medicine

General internal medicine (GIM) received a high priority rating from the Task Force despite an increasing supply trend and a 46% net gain from 1996-2005 (Figure VIII.10). While some of the need is for traditional GIM practitioners, much of the current interest is due to the growing demand for hospitalists.

Iowa's 407 general internists are distributed across 51 of its 99 counties (Figure VIII.11). Compared to past patterns, internists today are increasingly likely to practice in a rural hospital community, often as a member of a family medicine group. Otherwise, their practices are concentrated in the state's larger cities. County, state and U.S. population to general internist ratios are displayed in Figure VIII.12. These show that overall Iowa has more than twice the population per general internist ratio (7,190 vs. 3,000), or less than half (13.9 vs. 33.3) the number of gen-

eral internists per 100,000 population as the nation as a whole.

General internal medicine outreach clinic activity is low, affecting just three rural Iowa communities in 2005 (Figure VIII.13). This low level of activity and the lower internist-to-population ratios is accounted for in no small measure by Iowa's large population of family physicians, who constitute 25% of its physician workforce. Family physicians are the principal providers of primary care in Iowa and typically refer patients directly to sub-specialists — not general internists. This reality places a relative constraint on the demand for practicing general internists, but is very unlikely to impact the growing demand for general internal medicine hospitalists. Indeed, the fact that many family physicians in metropolitan areas of Iowa are changing the scope of their practices to exclude inpatient care is intensifying the demand for hospitalists.

FIGURE VIII.10

IOWA PHYSICIAN SUPPLY ANNUAL NET GAIN (LOSS) BY SPECIALTY 1996-2005

General Internal Medicine	<u>Entered</u>	<u>Left</u>	Net Gain (Loss)	<u>Total</u>
1995				279
1996	32	20	12	
1997	41	15	26	
1998	35	18	17	
1999	39	23	16	
2000	35	28	7	
2001	34	22	12	
2002	38	22	16	
2003	34	24	10	
2004	27	19	8	
2005	<u>27</u>	<u>23</u>	<u>4</u>	
Total	342	214	128	407
Annual Average	34	21	13	
1996 – 2005 Percent Change			45.9%	
Current Trend			Increasing	

FIGURE VIII.11 **DISTRIBUTION OF GENERAL INTERNISTS (407)**

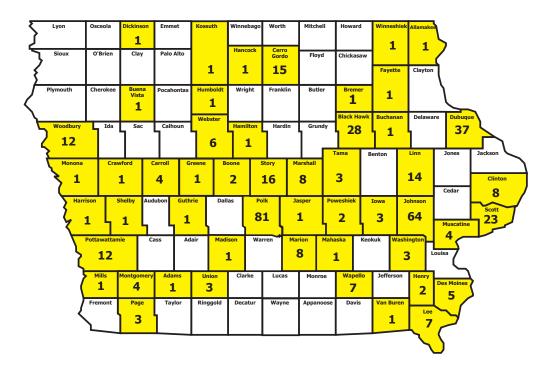


FIGURE VIII.12 **COUNTY POPULATION PER GENERAL INTERNIST**

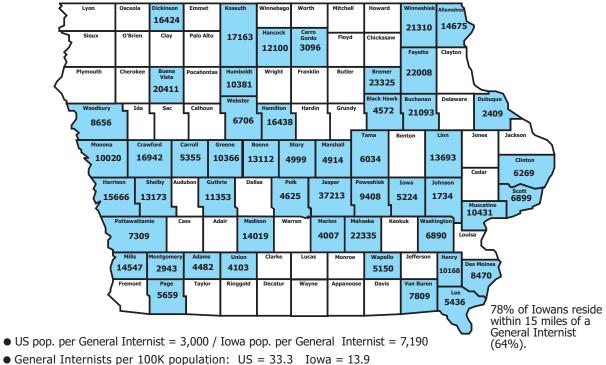
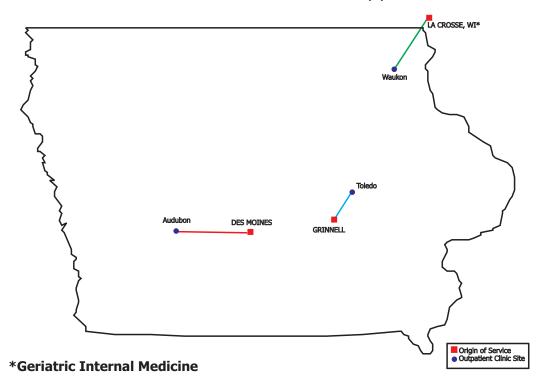


FIGURE VIII.13 VISITING CONSULTANT CLINICS GENERAL INTERNAL MEDICINE (3)



Orthopedic Surgery

Iowa's net supply of orthopedic surgeons has increased by 10% for the 10-year period ending in 2005 (Figure VIII.14). However, the failure to gain orthopedists in 2004, together with a net loss in 2005, are sufficient to declare the supply trend essentially level. The distribution of orthopedic surgeons across the state largely mirrors the distribution of Iowa cities with populations greater than 20,000. Of Iowa's 99 counties, just 28 are home to an orthopedist and of these, eight are served by a solo practitioner (Figure VIII.15). This observation further documents the concept and importance of a "critical mass" requirement to support multiple practitioners in a single group, as discussed earlier.

Though the supply of orthopedic surgeons is trending relatively level, it is interesting that the number of orthopedic surgeons in Iowa (and on the Iowa border) is sufficient to staff 125 visiting consultant clinics in 85 rural hospitals from 2 to 4 times per month (Figure VIII.16). This pattern strongly suggests that when the

physician-to-population ratio exceeds a specialty-specific threshold, practice economics will stimulate outreach activity to provide a sufficient population base to support adequate cases for surgery and financial viability. From the standpoint of both Iowa and its residents, this situation translates to far better access to orthopedic surgeons than would have been predicted if the analysis were limited to the preceding geographic distribution data.

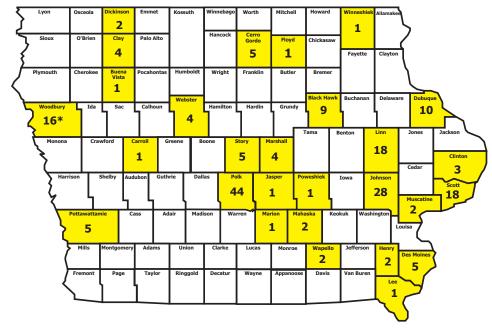
Computation of county, state and national population-to-orthopedist ratios yields some interesting comparisons. Iowa's ratio of 15,007 to 1 is essentially equal to the U.S. ratio of 15,000 to 1. Thus, the number of orthopedic surgeons per 100,000 population is comparable, too. Nearly three-quarters of Iowa's population resides within 20 miles of an orthopedic surgeon (Figure VIII.17), and geographic access is further improved through the 125 visiting consultant clinics in 85 rural locations as described above.

FIGURE VIII.14

IOWA PHYSICIAN SUPPLY ANNUAL NET GAIN (LOSS) BY SPECIALTY 1996-2005

Orthopedic Surgery	<u>Entered</u>	<u>Left</u>	Net Gain (Loss)	<u>Total</u> 168
1996	7	6	1	
1997	13	6	7	
1998	11	7	4	
1999	11	7	4	
2000	16	7	9	
2001	8	15	(7)	
2002	6	5	1	
2003	10	6	4	
2004	9	9	0	
2005	<u>8</u>	<u>14</u>	<u>(6)</u>	
Total	99	82	17	185
Annual Average	10	8	2	
1996 - 2005 Percent Change			10.1%	
Current Trend			Level	

DISTRIBUTION OF ORTHOPEDIC SURGEONS (196)*



*Includes 10 Orthopedic Surgeons from Dakota Dunes, SD

FIGURE VIII.16
VISITING CONSULTANT CLINICS

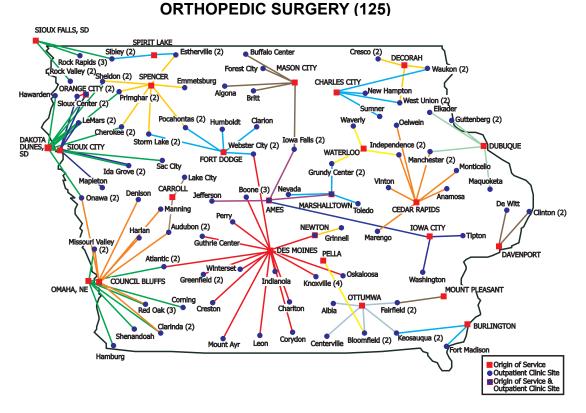
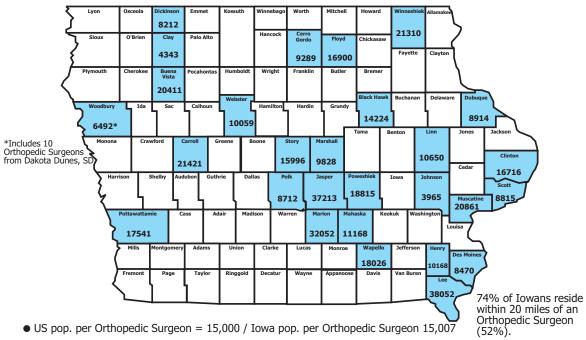


FIGURE VIII.17

COUNTY POPULATION PER ORTHOPEDIC SURGEON



• Orthopedic Surgeons per 100K population: US = 6.7 Iowa = 6.7

Cardiology (Cardiovascular Disease)

Iowa's net supply of cardiologists has increased by 26% for the 10-year period ending 2005 (Figure VIII.18). This represents an overall net gain of 34 cardiologists, raising the state's total to 166. The net gain was greater in the first half of that period. Small net losses in 2004 and 2005 indicate that the supply of this specialty merits continued monitoring.

Similar to the situation in orthopedics, the distribution of cardiologists across the state largely mirrors the distribution of Iowa cities with populations greater than 25,000 population, with one exception — Carroll County (Figure VIII.19). Just 14 of Iowa's 99 counties are home to at least one cardiologist. Each of these counties, again with the exception of Carroll, is served by more than one cardiologist. These data again provide further support for the importance of a critical mass of practitioners for a viable subspecialty practice.

Cardiologists, much like orthopedic surgeons, are in sufficient supply to necessitate and support an extensive outreach network of consultation clinics that make cardiac care more accessible to rural residents. Indeed, 156 regularly scheduled visiting consultant clinics in 95 rural hospitals are conducted at least monthly across Iowa (Figure VIII.20). This would not be possible if there were an overall shortage of cardiologists.

Iowa's overall population-to-cardiologist ratio is 17,628 compared to the U.S. ratio of 14,100 to 1. The number of cardiologists per 100,000 population for Iowa and the United States is 5.7 and 7.2, respectively. In addition to the considerable access to cardiologists offered by the visiting consultant clinics in nearly every rural hospital, fully 69% of Iowans reside within 25 miles of a cardiologist's office (Figure VIII.21).

FIGURE VIII.18

IOWA PHYSICIAN SUPPLY ANNUAL NET GAIN (LOSS) BY SPECIALTY 1996-2005

<u>Cardiovascular Disease</u>	<u>Entered</u>	<u>Left</u>	Net Gain (Loss)	<u>Total</u>
1995				132
1996	17	2	15	
1997	12	4	8	
1998	11	9	2	
1999	4	8	(4)	
2000	16	6	10	
2001	15	8	7	
2002	14	14	0	
2003	12	10	2	
2004	10	11	(1)	
2005	<u>4</u>	9	<u>(5)</u>	
Total	115	81	34	166
Annual Average	11	8	3	
1996 - 2005 Percent Change			25.8%	
Current Trend			Increasing	

FIGURE VIII.19
DISTRIBUTION OF CARDIOLOGISTS (166)

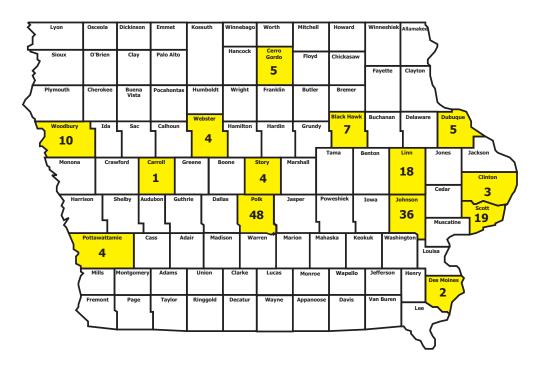


FIGURE VIII.20

VISITING CONSULTANT CLINICS CARDIOVASCULAR DISEASE (156)

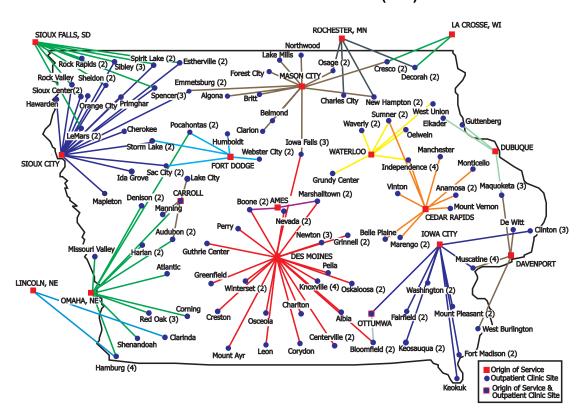
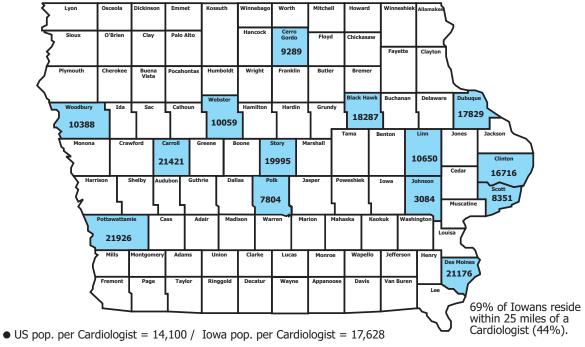


FIGURE VIII.21 COUNTY POPULATION PER CARDIOLOGIST



• Cardiologists per 100K population: US = 7.1 Iowa = 5.7

Summary

Psychiatry:

- Declining supply trend
- One-third of Iowa's counties have a psychiatrist
- Iowa physician-to-population ratio half of the national average
- Access improved by outreach (visiting clinics)
- 79% of Iowans live within 20 minutes of a psychiatrist

Neurosurgery:

- · Level supply trend
- Limited regional distribution (eight counties)
- Iowa physician-to-population ratio substantially below the national average
- Outreach less appropriate for neurosurgery
- 65% of Iowans live within 50 miles of a neurosurgeon

General Internal Medicine:

- Population-to-physician ratio, distribution and outreach care affected by number of FPs in Iowa
- Increasing supply trend
- 78% of Iowans live within 15 miles of a general internist

Orthopedics:

- Level supply trend
- Regional distribution (28 counties)
- Iowa physician-to-population ratio equivalent to the national average
- Additional access through 125 separate orthopedic outreach arrangements in 85 towns, two to four times per month
- 74% of Iowans live within 20 miles of an orthopedist

Cardiology:

- Increasing supply trend
- Regional distribution (14 counties)
- Iowa physician-to-population ratio is approaching the national average
- Additional access through 156 cardiology visiting clinics in 95 towns
- 69% of Iowans live within 25 miles of a cardiologist

Task Force Guidance

At the conclusion of the above supply analysis, the next undertaking was to have been the completion of demand surveys for the same top five ranked specialties. However, based on the supply analysis, the Task Force elected to substitute three lower ranked specialties (neurology, obstetrics/ gynecology and general surgery) for neurosurgery and orthopedic surgery in the demand segment. Specifically, the rationale for this decision was the limited number of neurosurgery opportunities (as discussed above) and the discovery that orthopedic surgeons, while difficult to recruit in a competitive market, are not the subject of an acute shortage in Iowa. Before proceeding with the demand studies, a supply analysis for these three additional specialties was conducted; a summary of the results is reported below.

Neurology:

- There is an increasing supply trend over the past 10 years, but a declining pattern in the past five years, ending 2005.
- Distribution is regional, limited mostly to cities with >20,000 population.
- The neurologist-to-population ratio in Iowa is 3.1 per 100,000 compared to 4.0 for the nation.
- 63% of Iowans reside within 20 miles of a neurologist.
- Access is improved by 58 visiting clinics in 48 rural towns.

Obstetrics/Gynecology:

- There is an increasing supply trend over past 10 years, but a declining pattern in the past five years, ending 2005.
- Distribution is regional with increasing pattern of ob/gyn practitioners in towns <15,000.

- The ob/gyn practitioner-to-population ratio in Iowa is 6.6 per 100,000 compared to 13.0 per 100,000 for the nation; Iowa's ratio is influenced by family physicians who practice obstetrics.
- 72% of Iowans reside within 20 miles of an ob/gyn.
- Access to pre-natal and gynecological care is increased through 40 visiting specialist clinics, particularly in western Iowa.

General Surgery:

- There is a level supply trend over the past 10years but a declining pattern for past five years.
- 56 counties have at least one general surgeon; nine of the 43 remaining counties do not have a hospital to support a surgeon's practice.
- The general surgeon-to-population ratio in Iowa is 7.0 per 100,000 compared to 8.9 for the nation.
- 78% of Iowans reside within 15 miles of a general surgeon.
- Access to surgeons is measurably increased through itinerant *inpatient* surgery coverage in 47 rural hospital communities, which helps rural family physicians who need Caesareansection back-up if they are performing obstetrics.

IX. PHYSICIAN DEMAND

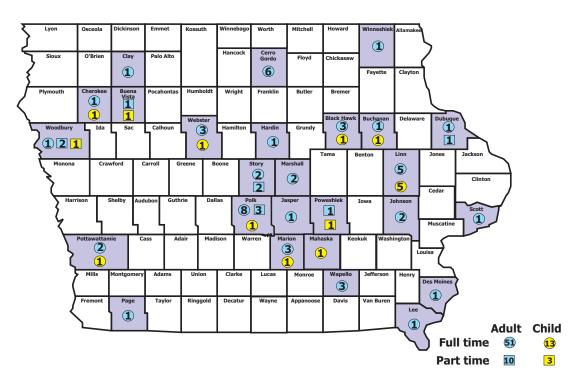
The current market demand for a specific specialty is precisely quantifiable for a given point in time. The demand analysis, conducted by the UI Carver College of Medicine's Office Statewide Clinical Education Programs (OSCEP) administrative staff, ascertained the precise number of job opportunities available in each of the selected specialties at the time of the study. The number of practice and new opportunities was determined by contacting every possible employer or practice entity for a given specialty, thus ensuring a 100% response rate. This technique, used by workforce analysts, accounts for all job openings at the time of the survey. The result of this process is a specific count of the number of jobs available in a specific specialty, i.e., a measure of what the market will actually support rather than an estimate based on an externally determined benchmark. Physician demand studies have been conducted on an annual basis by staff in OSCEP since 1977 for various medical and surgical specialties.

Psychiatry

At the time of the demand study there were 77 fulland part-time practice opportunities for psychiatrists, 61 in adult psychiatry and 16 in child psychiatry. Due to the nature of psychiatric clinical practice, including agency contracts for significant part-time commitments, it was essential that part-time positions be counted along with full-time positions. The study group counted part-time positions of .5 FTE or greater. The 2006 demand for psychiatrists in Iowa is shown in Figure IX.1; part-time positions are identified separately.

FIGURE IX.1

CURRENT PHYSICIAN DEMAND
PSYCHIATRY (77)



General Internal Medicine

Demand for general internists has been measured annually for several years. The study conducted for the Task Force in 2006 revealed an increase in demand for general internists above that in recent years. The total number of openings was 56, an increase of 13 over the number in 2005 (Figure IX.2). When the relatively new (for Iowa) role of "hospitalist" is included in the count, the number of openings in general internal medicine increases to 79; 56 positions in conventional practice settings and 23 full-time hospitalist positions (Figure IX.3).

A position (job) turnover analysis can be performed for specialties in Iowa for which demand studies have been conducted in past years. Such an analysis for general internal medicine (GIM) is shown in Figure IX.4. The table is complex, so it is important for the reader to track diagonally following the same color when progressing from year to year. For example in 2001, there were 40 GIM opportunities (yellow). Of those, 25 (yellow) were filled or otherwise closed by 2002. The remaining 15 (yellow) were still open in 2002 and were "combined" with 27 *new* openings (white) in 2002 for a total of 42 GIM opportunities

(pink) statewide that year. The progression from that point follows the pink track diagonally.

To underscore the continuous progress that is made in filling positions, analysts calculate the number of positions from the first year that are still open the fifth year. That number (2) is shown in parenthesis in 2006. Thus, only two of the original 40 positions from 2001 were still open at the time of the study in 2006. Nonetheless, the increase of openings in 2006 and strong demand for hospitalists warrant close monitoring.

At the bottom of the chart, additional workforce dynamics are presented for a more complete perspective. The number of general internists entering and leaving Iowa during each year is presented. The reason the number entering in a given year does not equal the number of closed positions that year is that closed positions are from the prior year's count of openings. There are additional reasons for variability, including unanticipated recruitment; jobs open but already contracted for, so they are not reported as open during the study; and openings that occur after the time of the study, but are filled before the next year's count.

IOWA GENERAL INTERNAL MEDICINE
PRIVATE PRACTICE OPPORTUNITIES

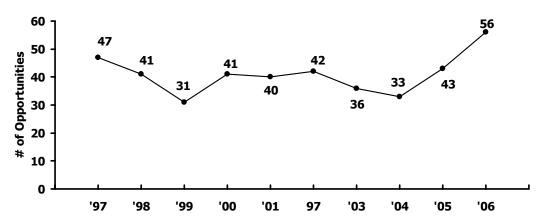
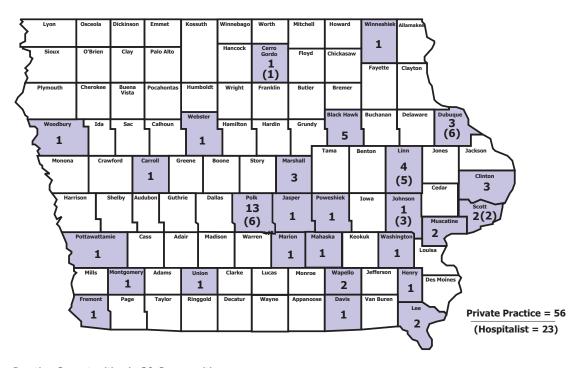


FIGURE IX.3

CURRENT PHYSICIAN DEMAND GENERAL INTERNAL MEDICINE (79)



Practice Opportunities in 30 Communities

FIGURE IX.4
TURNOVER IN IOWA JOB OPPORTUNITIES

General Internal Medicine											
	2001	20	2002		2003		2004		2005		06
Total Opportunities	40		42		32		33		43		56(2)
■ Closed *		25		25		20		20		19	
Continued			15		17		12		13		23
■ New			27		15		21		30		33
GIM Entering		38		35		27		27		16**	
GIM Leaving		2	23	2	4	1	9	2	3	3	1**

Note: Figures in parentheses are the number of specific job opportunities that remained open from 2002 to 2006.

- * Opportunities closed from prior year
- ** Partial report until August 2006

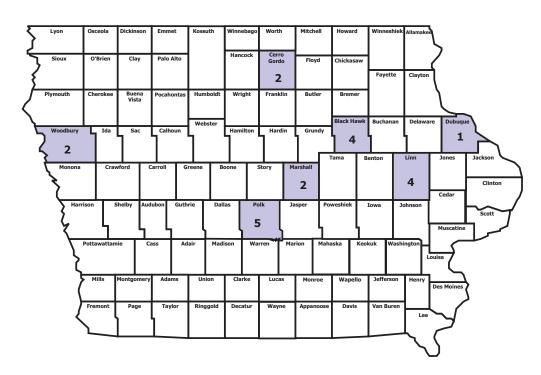
Cardiology

The demand study for medical cardiologists identified 20 practice opportunities in seven communities, including six regional centers. Most of the openings were related to *expansion* plans for existing large cardiology groups (Figure IX.5).

FIGURE IX.5

CURRENT PHYSICIAN DEMAND

CARDIOLOGISTS (20)

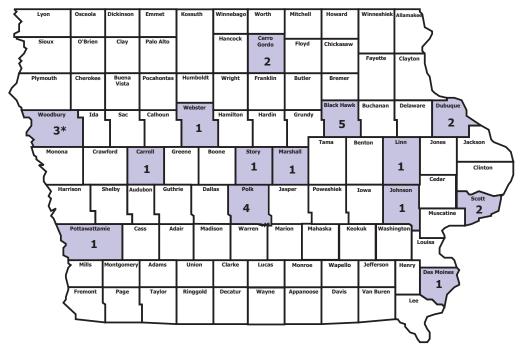


Neurology

The demand study for neurologists identified 26 practice opportunities statewide. This figure includes three positions that are in a group of physicians located in Dakota Dunes, South Dakota. The group principally serves Woodbury County (Iowa) and was based in Iowa until moving to South Dakota for tax advantages.

The distribution of neurology practice opportunities for the most part parallels the distribution of Iowa's regional medical centers, with each center having at least one opening. Des Moines, Waterloo/Cedar Falls, and Sioux City each report three to five openings. In contrast to cardiology, most of the openings in neurology are not new positions but rather are replacements for neurologists who have left practice, suggesting a particularly critical need in this specialty (Figure IX.6).

FIGURE IX.6 CURRENT PHYSICIAN DEMAND NEUROLOGISTS (26*)



^{* 3} Based in South Dakota

Obstetrics/Gynecology

The demand study for obstetrics and gynecology, in combination with data from earlier studies, demonstrated a growing number of professional opportunities in obstetrics/gynecology. This number has increased incrementally from 15 to 28 over the past four years (Figure IX.7). Half of the demand (14 opportunities) is accounted for by two counties — Black Hawk (5) and Polk (9). The remaining 14 openings are spread across 11 counties, most of which have a sufficient population to support obstetrics/gynecology group practices (Figure IX.8). It is noteworthy that of the current demand for 28 obstetricians/gynecologists, half of the openings are due to replacement and half due to expansion positions.

Figure IX.9 shows the turnover analysis for obstetricians/gynecologists. It indicates that in any given year approximately half of the total practice opportunities — averaging 21 per year — are closed within a year of being offered. The remainder carry over to the next year. Of the original 26 openings in 2001, only one was still unfilled in 2006

OBSTETRICS AND GYNECOLOGY PRIVATE PRACTICE OPPORTUNITIES

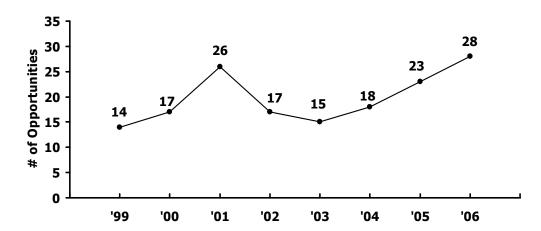


FIGURE IX.8

CURRENT PHYSICIAN DEMANDOBSTETRICIANS/GYNECOLOGISTS (28)

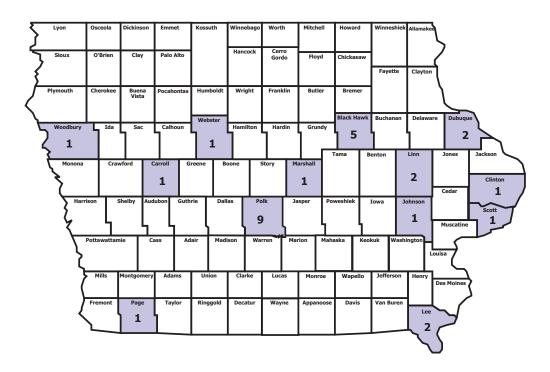


FIGURE IX.9
TURNOVER IN IOWA JOB OPPORTUNITIES

Obstetrics/Gynecology												
	2001	20	2002		2003		2004		2005		2006	
Total Opportunities	26		17		15		18		23		28 (1)	
■ Closed *		16		9		6		8		13		
 Continued 			10		8		9		10		10	
■ New			7		7		9		13		18	
OB/GYN Entering		17		8		10		15		19**		
OB/GYN Leaving		1	0	14		10		18		8**		

Note: Figures in parentheses are the number of specific job opportunities that remained open from 2002 to 2006.

- * Opportunities closed from prior year
- ** Partial report until August 2006

General Surgery

The results of the recent and past demand studies for general surgery are shown in Figure IX.10. The number of openings was in a "steady state" from 1997 through 2002 at 18 to 22 per year, recognizing that these were not the same set of openings year-to-year. In 2003 and 2004, the number of practice opportunities increased, but in the last two years it has returned to the previous level.

Only four of Iowa's larger population centers are seeking additional general surgeons, but one of them (Polk County) had six opportunities open at the time of the study. Fourteen non-metropolitan communities, mostly rural towns of <10,000 population, are each seeking one general surgeon (Figure IX.11).

Successful rural surgeon recruitment efforts have value beyond regular general surgery services. Surgeons provide critical back-up support that allows family physicians to do obstetrics.

The turnover analysis for general surgery positions shows that typically two-thirds of the average 26 surgery opportunities offered in a given year are closed by the time of the demand study the following year. This rate of closure led to the filling of all of the opportunities from 2001 by the time of the study in 2006 (Figure IX.12).



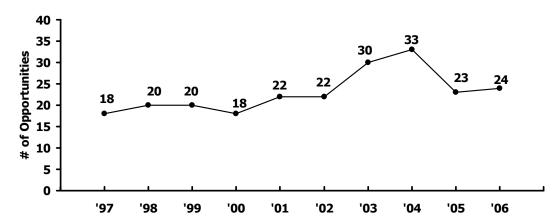


FIGURE IX.11

CURRENT PHYSICIAN DEMAND GENERAL SURGEONS (24)

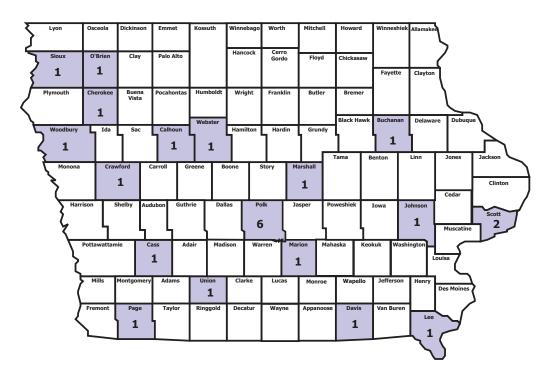


FIGURE IX.12
TURNOVER IN IOWA JOB OPPORTUNITIES

General Surgery											
	2001	20	02	2003		2004		2005		2006	
Total Opportunities	22		22		30		33		23		24 (0)
Closed *		16		11		21		22		14	
Continued			6		11		9		11		9
■ New			16		19		24		12		15
GSs Entering		1	11		13		7	25		13**	
GSs Leaving		1	1	10		23		13		10**	

Note: Figures in parentheses are the number of specific job opportunities that remained open from 2002 to 2006.

^{*} Opportunities closed from prior year

^{**} Partial report until August 2006

Critical Demand Index (CDI)

The Task Force discussed the results of the above demand studies by individual specialty and then comparatively across specialties. An important outcome of the group's deliberations was the development of a method to quantify the intensity of demand across medical specialties. Two data sets must be available for this purpose: (1) the current demand in a given specialty expressed as a finite number of job opportunities and (2) the current supply in the same specialty.

The Task Force reasoned that when comparing two specialties which have a similar number of job openings but substantially different supplies, the one with the smaller supply base would likely experience a more *intense* demand. Using this logic, an index of demand intensity (the critical demand index) was computed by dividing the current demand by the current supply for each specialty in this analysis (Figure IX.13). The greater the fraction, the greater the intensity (or seriousness) of demand for the specialty. In the comparative analysis, two additional specialties — family medicine and general pediatrics

— were included because current demand data were readily available for them from another analysis.

The Task Force also reasoned that including the average number of physicians entering Iowa practices annually in each specialty would give the demand analysis a temporal dimension. Using the functionality of the Iowa Physician Information System, this annual average was computed for the selected specialties for the most recent 10-year period ending 2005 (Figure IX.13).

The conclusions from these computations include:

- The intensity of demand in neurology and psychiatry is twice that of the other non-primary care specialties and more than four-fold greater than family medicine and pediatrics, for which the current number of openings compared to the current supply is substantially more favorable.
- It takes, on average, two to three years longer to fill the typical neurology or psychiatry position than a position in any of the other specialties in the analysis.

FIGURE IX.13

CRITICAL DEMAND INDEX FOR SELECTED MEDICAL SPECIALTIES

	Current Year's <u>Demand</u>	Current Year's Supply	Ann <u>CDI</u> *** <u>No</u>	ual Average . Entering	Average Years to Fill Position****
• Neurology	26	82	.32	5	5.2
• Psychiatry	64 (77*)	220	.29 (.35*)	16	4.0 (4.8*)
• Gen Internal Medicine	56 (79**)	407	.14 (.19**)	34	1.6 (2.3**)
• Ob/Gyn	28	215	.13	14	2.0
• General Surgery	24	198	.12	13	1.8
• Cardiology	20	168	.12	12	1.7
Family Medicine	94	1271	.07	78	1.2
• General Pediatrics	10	229	.04	16	0.6

^{*} If part-time positions are counted

^{**} If hospitalists are counted

^{***} Critical Demand Indicator = current demand ÷ current supply

^{****} Average years to fill: Current demand ÷ the annual average number of these specialists entering

Iowa during the prior 10 years yields an estimate of recruitment difficulty.

X. GRADUATE MEDICAL EDUCATION

In order to assess the potential workforce contribution of graduate medical education programs, the Task Force reviewed Iowa's current capacity to train allopathic and osteopathic physicians in residencies and fellowships. The roster of Iowa's graduate medical education (GME) programs is included as Appendix I of this report. The programs and their 2006-07 enrollments are listed by community with Iowa City-based programs listed last because of the large number of residencies and fellowships at The University of Iowa.

An inventory of Iowa's 101 GME programs by type of sponsorship is reported in Figure X.1. Note that non-accredited fellowships represent programs for which accreditation is not offered through the Accreditation Council for Graduate Medical Education, i.e., they do not represent a failure to meet accreditation standards. Some programs in this category are certificate programs

recognized by the American Board of Medical Specialties, while others are even more highly specialized and sharply focused in a subspecialty, but are not yet certificate programs.

A summary of the enrollment in Iowa's GME programs is shown in Figure X.2. Iowa currently has 920 (94%) of its 979 GME positions filled, including osteopathic positions.

With the exception of Iowa's primary care and general surgery residencies, data are not readily available to gauge the practice site selection pattern of Iowa residency graduates. Figure X.3 summarizes the choices made by graduates of those residency programs over the past eight years. Graduates made decisions with respect to practicing in Iowa, practicing elsewhere, or continuing training in a more specialized program (i.e., fellowship).

FIGURE X.1

IOWA GME PROGRAM SUMMARY

SPONSORSHIP		NUMBER
UI Residency Programs		23
UI Fellowship Programs		61
AccreditedNon-Accredited	35 26	
UI-Affiliated Programs		14
ResidenciesFellowships	12 2	
Independent Programs		3
Total P	rograms in Iowa	101

FIGURE X.2

SOURCE OF TRAINEES IN IOWA GME PROGRAMS BY MEDICAL SCHOOL TYPE 2006-2007

Medical School	Residents	<u>Fellows</u>	<u>Tot</u>	al (%)
USMD	459	118	557	(63%)
International Med. Grad.	132	559	191	(21%)
Osteopathic	<u>136</u>	<u>16</u>	<u>152</u>	(16%)
TOTAL	727	193	920	(100%)

FIGURE X.3

RETENTION OF IOWA RESIDENCY GRADUATES FOR IOWA PRACTICE 1999-2006

Decision	Family Medicine	Gen. Int. Medicine	Pediatrics	General Surgery
Iowa Practice	454 (61%)	55 (19%)	33 (22%)	15 (22%)
 Non-Iowa Practice 	171 (37%)	48 (17%)	54 (39%)	25 (33%)
Further Training	17 (2%)	186 (64%)	54 (39%)	28 (45%)
Total	642 (100%)	289 (100%)	141 (100%)	68 (100%)

Among the graduates of the four specialties, family medicine graduates were the most likely to stay in Iowa with an overall state retention rate of 61%. Internal medicine graduates were nearly twice as likely to train in a subspecialty than to enter practice (64% vs. 36%). Pediatrics graduates were more likely to practice outside Iowa if they entered practice (39% vs. 22%), but another 39% pursued additional training in a subspecialty fellowship program. General surgery graduates have a pattern similar to pediatrics — more of those who enter practice leave Iowa, and nearly half of the graduates continue training in a more specialized surgery discipline.

The Task Force concluded that rather than add new positions, at least for the specialties shown in Figure X.3, workforce needs/demands could be better served by doing more to *retain* graduates of Iowa's GME programs. The Task Force did, however, weigh the merits of establishing new residency and fellowship programs in community hospital settings and expanding University training programs so more residents and fellows could be sent into community settings for block rotations. Constraints working against such initiatives were identified by the group and include:

- Institutional accreditation requirements issued by the Accreditation Council for Graduate Medical Education;
- Program accreditation requirements issued by the respective Residency Review Committees (RRC) responsible for programs in a given specialty;
- The current GME reimbursement policy of the Centers for Medicare and Medicaid Services, which caps the number of training positions an institution is allowed to claim at the number it claimed in 1996; and

 Resident recruitment considerations, which are key to maintaining program quality and sustaining program operations.

The accreditation requirements of an RRC specify the educational resources required for approval of a new program, including the number of qualified faculty and the volume of patients and patient problems. They also specify limits in terms of placing residents and fellows at some distance from the parent institution.

Reimbursement caps make starting a new program or expanding an existing program difficult, because there is no other financial source to offset the additional costs of training more residents or fellows.

Finally, if residents and fellows are required to train away from their home, family and parent institution, there is a high probability of dissatisfaction stemming from the dislocation. This can result in resident unrest and difficulties in the highly competitive resident recruitment process.

XI. CONCLUSIONS

Based on analysis and discussion of data presented at their meetings, the Task Force collectively drew the following conclusions:

- Over the past 20 years, Iowa has experienced a steady increase in physician supply while its population has remained level.
- Iowa's primary care workforce is projected to continue its growth.
- The aggregate non-primary care workforce will grow at a slow rate.
- Iowa's physician population is younger than usually perceived.
- The increasing proportion of women in Iowa's physician workforce has implications for future workforce requirements that are as yet not well understood and are inadequately accounted for in the current supply analysis. This fact coupled with the changing expectations of younger physicians relative to having more personal and family time, likely points to a greater supply requirement in the future.
- Physician-to-population ratios are of limited value as measures of workforce needs, marketplace demand, or the availability of physicians.
- Rural and urban workforce requirements differ due to population density and other factors that affect the feasibility of medical practice.
- The rate of physician attrition in Iowa is stable, with relocation to other states contributing much more than physician retirement.
- The proportion of Iowa physicians who are international medical graduates (IMGs) has been

- stable over time. However, IMGs make up a disproportionate share of physicians entering and leaving Iowa practices.
- IMGs tend to practice in larger communities with larger ethnic populations.
- Medical and surgical outreach clinics originating from regional medical centers help make specialized services more accessible to residents of Iowa's rural communities.
- The top five specialty recruitment priorities (as perceived by the Task Force) are: psychiatry, neurosurgery, general internal medicine, orthopedics, and cardiology. Neurology, obstetrics/gynecology and general surgery also ranked highly.
- A statewide practice opportunity analysis for specialties selected by the Task Force confirms an intense demand for psychiatrists and neurologists; moderate demand for general internists, obstetrician/gynecologists, general surgeons and cardiologists; and relatively less demand for family physicians and pediatricians.
- Any desire to expand GME programs, in either size or number, or to rotate trainees to extramural sites, must be reconciled with GME accreditation requirements, reimbursement caps, and the effect on resident recruitment.

XII. RECOMMENDATIONS

The Task Force developed 17 recommendations that it grouped in four categories:

Physician Education / Training Capacity

- Increase the class size of the UI Carver College of Medicine modestly (~10%) and increase the proportion of medical school graduates who remain in Iowa for residency training.
- Increase the enrollment in select Iowa
 residencies and fellowships based on physician
 demand data. To that end: promote Iowa's
 practice opportunities among medical students,
 residents and fellows, seek state and private funds
 for additional graduate training positions, energize
 student interest groups in the specialties for
 which demand is high, initiate early recruitment
 programs at the pre-medical school level.
- Consider adding residency slots in psychiatry and general surgery (rural track) using the community-based family medicine residency model.
- Develop and validate a national index to prospectively identify specialties in which a supply shortage might develop due to downward trends in medical student and resident career choice. (This will require new financial support.)

Physician Retention

- Identify the specific reasons for attrition associated with physician relocation and help in developing strategies aimed at stemming the outflow of physicians. (This will require new financial support.)
- Establish favorable state, regional and local loan repayment programs for specific specialties using

- the primary care model of years-of-service in exchange for specified amounts of loan repayment.
- Publicize Iowa practice opportunities throughout the University's GME system and promote contacts between prospective employers and UI GME program directors and trainees.
- Establish programs for early pipeline collaborations/connections between students and residents, and specific communities.
- Work with the IMS, IHA and other stakeholder organizations in developing programs that promote Iowa as a place to practice and live.
- Set a minimum target for the number of University of Iowa students training in select allopathic residency programs in Iowa.
- Provide technical assistance to medical groups, health systems and hospitals in designing their recruitment packages, including recommended incentives, contract advice, and recruitment strategies. (This will require new financial support.)
- Continue to monitor age and gender trends within the Iowa physician community.

Recruitment of Physicians from Other States

 Systematically contact Iowa medical graduates training in other states and promote information concerning Iowa opportunities. (This will require new financial support.)



Public Policy Initiatives

- Seek state tax relief for physician specialties that are in high demand and short supply, in return for entering practice and remaining in Iowa for a specified term. Include penalties for default.
- Implement tort reform.
- Improve Medicare and Medicaid reimbursement to Iowa physicians.
- Seek additional financial support from state and private sources for UI Carver College of Medicine outreach efforts supporting physician workforce analysis, and physician recruitment and retention.

XIII. ACTION AGENDA

From the preceding recommendations, each Task Force member selected and ranked his top 10 recommendations. The rankings were weighted at 10 points for the top rank, nine for the next rank and so forth. The rankings were then merged to develop a single, prioritized list of the top 10 recommendations for action (Figure XIII.1).

FIGURE XIII.1

TASK FORCE ON THE IOWA PHYSICIAN WORKFORCE TOP RANKED RECOMMENDATIONS "THE ACTION AGENDA"

Rank	<u>Suggestion</u>	Score
1	Identify the specific reasons for attrition associated with physician relocation and help in developing strategies aimed at stemming the outflow of physicians. (Requires financial support.)	82
2	Establish favorable state, regional and local loan repayment programs for select specialties using the primary care model of years-of-service in exchange for specified amounts of loan repayment.	79
3	Systematically contact Iowa medical graduates training in other states and promote information concerning Iowa opportunities. (Requires financial support.)	53
4	Consider adding residency slots in psychiatry and general surgery (rural track) using the community-based family medicine residency model.	50
5	Increase the enrollment in select Iowa residencies and fellowships based on demand data. To that end: • promote Iowa's practice opportunities among medical students, residents and fellows. • seek state and private funds for additional graduate training positions. • energize student interest groups in the specialties for which demand is high. • initiate early recruitment programs at the pre-medical school level.	47
6	Seek state tax relief for physician specialties in high demand and short supply, in return for entering practice and remaining in Iowa for a specified term. Include penalties for default.	41
7	Publicize Iowa practice opportunities throughout the University's GME system and promote contacts between prospective employers and UI GME program directors and trainees.	36
8	Increase the class size of the Carver College of Medicine modestly (~10%) and increase the proportion of medical school graduates who remain in Iowa for residency training.	36
9	Improve Medicare and Medicaid reimbursement to Iowa physicians.	33
10	Develop and validate a national index to prospectively identify specialties in which a supply shortage might develop due to downward trends in medical student and resident career choice. (Requires financial support.)	33

XIV. COMMUNICATION OF REPORT CONTENTS

This report has been sent to Dr. Jean E. Robillard and Ms. Donna Katen-Bahensky, whose charge gave rise to the report. It has been shared with Task Force members and will be sent to all organizations that have a stake in the future of the Iowa physician workforce, including the Iowa Medical Society, Iowa Academy of Family Physicians, Iowa Hospital Association, Des Moines University, Department of Public Health, as well as other organizations.

Much was learned through the Task Force proceedings, and this rich experience will be particularly valuable to The University of Iowa in the context of its role as a state institution serving the needs of Iowa's citizens. The UI Carver College of Medicine and University of Iowa Hospitals and Clinics are contemplating the establishment of an Advisory Council with broad representation that would meet periodically to share ideas, concerns, and data pertaining to Iowa's physician workforce and other health service providers. Such a forum would keep workforce stakeholders in touch with one another as workforce supply and demand, and the practice environment, change over time.

The Advisory Council could also play a steering role as the state begins to address the Task Force's action agenda. Four of the top 10 recommendations call for research, data collection, analysis, and workforce recruitment functions that will require more professional staff effort than is currently available. The council can help The University of Iowa explore options for covering the costs associated with those recommendations. Other recommendations imply legislative initiatives, which could benefit from the broad support of organizations represented on the Advisory Council.



XV. APPENDIX

IOWA RESIDENCY AND FELLOWSHIP PROGRAMS

Positions Available vs. Trainee Enrollment

2006	_	2007
2000		2007

Program	2007	Residency		F	ellowship	
j	Available	Currently	A	vailable Curre		
	<u>Positions</u>	<u>Filled</u>	<u>Vacant</u>	<u>Positions</u>	Filled	<u>Vacant</u>
Cedar Rapids						
Cedar Rapids Medical Education Foundation						
<u>Program</u>						
Family Medicine	21	21	0	-	_	_
Davenport						
Genesis Medical Education Foundation						
<u>Program</u>						
Family Medicine	18	18	0	_	-	-
Trinity North/Trinity Regional						
<u>Program</u>						
Family Medicine (Osteopathic)	5	5	0	-	-	-
Des Moines						
Broadlawns Medical Center						
<u>Program</u>						
Family Medicine	24	24	0	-	-	-
Transitional	4	4	0	-	-	-
lowa Lutheran Hospital						
<u>Program</u>						
Family Medicine	24	16	8	_	-	-
Iowa Methodist Medical Center						
<u>Program</u>						
General Surgery (15 categorical, 2 prelim)	17	17	0	_	-	_
Internal Medicine (24 categorical, 2 prelim)	26	25	1	_	-	-
Pediatrics	18	18	0	-	-	-
Transitional	5	4	1	_	_	_
Mercy Medical Center-DM						
<u>Program</u>						
Family Medicine	24	22	2	-	-	-
General Surgery (Osteopathic)	20	18	2	_	_	-
Mason City						
Mercy Medical Center-UI						
<u>Program</u>						
Family Medicine	18	18	0	-	-	-
Palliative Medicine	-	-	-	1	1	0
Cardiovascular Disease (Osteopathic)	-	-	-	3	2	1
Sioux City						
Siouxland Medical Education Foundation						
Program	4.5		•			
Family Medicine	18	18	0	-	-	_

IOWA RESIDENCY AND FELLOWSHIP PROGRAMS

Positions Available vs. Trainee Enrollment

2006 - 2007

	Program		Residency		•	Fellowship	
		Available	Currently		vailable Curr		
		<u>Positions</u>	<u>Filled</u>	<u>Vacant</u>	<u>Positions</u>	<u>Filled</u>	<u>Vacant</u>
Mataula a							
Waterloo Northea	st Iowa Medical Education Foundation						
_							
FIC	ogram Family Madiaina*	10	10	0			
	Family Medicine*	19	19	0	_	_	_
Cit							
owa City	= UI non-accredited fellowships						
	ity Hospitals						
	ogram_			_			
R	Anesthesia	51	51	0	_	-	_
F	Anesthesia- Critical Care	-	-	-	4	4	0
F	Anesthesia- Pain Medicine		_	-	3	3	0
F	Anesthesia - Cardio-Thoracic	-	-	-	3	3	0
F	Anesthesia - Regional	-	-	-	3	3	0
R	Dermatology	13	13	0	-	-	-
R	Emergency Medicine	20	20	0	-	-	-
R	Family Medicine & Rural Track (Pella)	21	18	3	-	-	-
F	Family Medicine - Geriatric	_	-	_	2	0	2
R	Family Medicine - Psychiatry	5	5	0	-	-	-
R	Internal Medicine	77	74	3	_	_	_
F	IM - Allergy Immunology	_	_	-	3	3	0
F	IM - Cardiovascular Disease	_	_	_	21	19	2
F	IM - Clinical Cardiac Electrophysiology	_	_	_	2	2	0
F	IM - Endocrinology/Metabolism	_	_	_	4	2	2
F	IM - Gastroenterology/Hepatology	_	_	-	11	11	0
F	IM - General Medicine	-	-	-	7	7	0
F	IM - Hem, Onc, & Blood & Marrow Transplant	-	-	_	6	6	0
F	IM - Infectious Desiase	_	_	_	6	6	0
F	IM - Invtl Fellow - Cardiovascular Disease	_	_	_	2	2	0
F	IM - Nephrology	_	_	_	6	5	1
F	IM - Oncology	_	_	-	3	3	0
F	IM - Osteoporosis & Metabolic Bone Disease	_	_	_	1	1	0
F	IM - Pulmonary Disease & CCM	_	_	-	12	12	0
F	IM - Research Fellow - Nephrology	_	_	_	1	1	0
F	IM - Rheumatology	_	_	_	4	4	0
F	IM - Thyroid Cancer	_	_	_	1	1	0
R	Internal Medicine - Psychiatry	10	8	2	-	_	_
R	Neurology	20	19	1	_	_	_
F	Neurology - Child	_	_	_	3	0	3
F	Neurology - Clinical Neurophysiology	_	_	_	1	1	0
F	Neurology - Headache & Pain Mgt	_	_	_	1	1	0
F	Neurology - Sleep Medicine	_	_	_	2	2	0
R	Obstetrics/Gynecology	16	16	0	_	_	_
F.	Obstetrics/Gynecology - Oncology		_	_	2	2	0
F	Obstetrics/Gynecology - Maternal-Fetal	_	_	_	1	1	0
F	Obstetrics/Gynecology - Reproductive Endo	_	_	_	2	2	0
r R	Occupational Medicine	6	5	1	_	_	_
R	Ophthalmology	15	15	0	_	_	_
F	Ophthalmology - Corneal & External Diseases	1.3	1.5	_	1	1	0
F	Ophthalmology - Glaucoma	_		_	1		0
F	Ophthalinology - Glaucolla	<u>-</u>	_	_		1	U

IOWA RESIDENCY AND FELLOWSHIP PROGRAMS

Positions Available vs. Trainee Enrollment

2006 - 2007

	2006 - 2007										
	Program		Residency			Fellowship					
		Available (Available Currently			ently					
		<u>Positions</u>	<u>Filled</u>	<u>Vacant</u>	<u>Positions</u>	<u>Filled</u>	<u>Vacant</u>				
_					2	2	•				
F	Ophthalmology - Neuro-Ophthlmology	_	_	_	2	2	0				
F	Ophthalmology - Oculoplastics, Orbital & Onc	_	-	-	2	2	0				
F	Ophthalmology - Ophthalmic Pathology	_	-	-	1	1	0				
F	Ophthalmology - Pediatric Ophthalmology	_	_	-	1	1	0				
F	Ophthalmology - Vitreoretinal Disease/Surg	_	-	-	4	4	0				
R	Orthopaedic Surgery	30	28	2	_	-	_				
F	Surgery - Hand	_	_	_	1	1	0				
F	Surgery - Spinal	_	-	-	1	1	0				
F	Surgery - Sports Medicine	_	_	_	1	1	0				
R	Otolaryngology**	25	24	1	_	_	_				
F	Otolaryngology - Head & Neck Oncologic Surg	-	-	-	1	1	0				
F	Otolaryngology - Otology-Neurotology	_	-	-	2	1	1				
F	Otolaryngology - Pediatric Otolaryngology	_	_	_	1	1	0				
F	Otolaryngology - Research Training in Oto NIH	-	-	-	4	4	0				
F	Otolaryngology - Rhinology & Paranasal Sinus	-	-	-	1	1	0				
R	Pathology	20	19	1	_	-	-				
F	Pathology - Blood Banking/Transfusion Medicine	_	-	-	2	1	1				
F	Pathology - Cytopathology	-	_	-	2	2	0				
F	Pathology - Hematopathology	-	-	-	2	1	1				
F	Pathology - Medical Microbiology	-	-	-	1	1	0				
F	Pathology - Surgical Pathology	-	-	-	3	3	0				
R	Pediatrics	37	37	0	_	-	-				
F	Pediatrics - Developmental Disabilities	_	-	-	1	1	0				
F	Pediatrics - Gen Peds & Adolescent Med	_	-	-	2	2	0				
F	Pediatrics - Medical Genetics	_	_	_	1	1	0				
F	Pediatrics - Neonatology	_	_	_	6	5	1				
F	Pediatrics - Cardiology	_	_	_	5	4	1				
F	Pediatrics - Critical Care Medicine	_	_	_	3	3	0				
F	Pediatrics - Endocrinology	_	_	_	1	1	0				
F	Pediatrics - Gastroenterology	_	_	_	3	3	0				
F	Pediatrics - Hem/Onc	_	_	_	4	4	0				
F	Pediatrics - Pulmonary	_	_	_	6	0	6				
F	Pediatrics - Radiology	_	_	_	1	0	1				
F	Pediatrics - Research	_	-	_	1	1	0				
R	Psychiatry	28	25	3	<u>-</u>	_	_				
F.	Psychiatry - Clinical Neurobiology	_	_	_	1	1	0				
F	Psychiatry - Geriatric Psychiatry	_	_	_	2	1	1				
R	Child Psychiatry	7	7	0	_	_	_				
R	Radiology Diagnostic	33	32	1	_	_	_				
F	Radiology Diagnostic - Body Imaging	_	_	_	4	4	0				
F	Radiology Diagnostic - Body Imaging Radiology Diagnostic - Intvl Neuroradiology	_	_	_	1	1	0				
F	Radiology Diagnostic - Musculoskeletal	_			4	4	0				
F	Radiology Diagnostic - Neuroradiology	_	_	-	3	3	0				
r F	Radiology Diagnostic - Neuroradiology Radiology Diagnostic - Vascular & Intvl	_	_		2	2	0				
		-	_	-	2	۷	U				
R	Radiation Oncology	7	5	2	_	_	_				
R	Nuclear Medicine	3	3	0	_	_	_				

Appendix I.xls

^{*} One temporary position
** Program is moving from 5 to 6 per year

IOWA RESIDENCY AND FELLOWSHIP PROGRAMS

Positions Available vs. Trainee Enrollment

2006 - 2007

	Program		Residency			Fellowship	
		Available	ailable Currently Available Currently			ently	
		<u>Positions</u>	<u>Filled</u>	<u>Vacant</u>	<u>Positions</u>	<u>Filled</u>	<u>Vacant</u>
F	Nuclear Medicine - Positron Emission				1	1	0
R	Surgery	28	28	0	-	-	-
F	Surgery - Laparoscopic Bariatric	-	-	-	1	1	0
F	Surgery - Research	-	-	_	1	1	0
F	Cardio-Thoracic Surgery	_	_	_	4	3	1
F	Surgery - Transplant	-	-	-	1	1	0
F	Surgery - Vascular	-	_	_	2	2	0
R	Neurosurgery	12	12	0	_	-	_
R	Urology*	16	16	0	-	-	-
F	Urology - Endourology/Laparoscopy	-	-	-	1	1	0
F	Urology - Female Urology Pelvic Reconstruction	=	=	=	<u>1</u>	<u>1</u>	0
	TOTALS	761	727	34	218	193	25

^{*} One temporary position
** Program is moving from 5 to 6 per year